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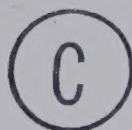
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THE UNIVERSITY OF ALBERTA
CORRELATES OF ILLEGITIMACY IN CANADA:
A CROSS-CULTURAL APPROACH

by



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ABSTRACT

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Correlates of Illegitimacy in Canada: A Cross-Cultural Approach," submitted by David Allan Rehorick in partial fulfillment of the requirements for the degree of Master of Arts.

ABSTRACT

The nature of this inquiry was an exploratory and descriptive examination of various demographic, statistical, and theoretical issues associated with the social phenomenon of illegitimacy in Canada.

With no extensive research into Canadian illegitimacy, the study proposed that initial inquiries adopt an holistic, aggregate-level approach in order to build a solid basis from which more specific formulations, propositions, and hypotheses might be explored.

To gain a more holistic view of one cultural milieu, a necessary requisite is at least some minimal understanding of other cultural settings. Therefore, the inquiry performed a necessary first step by juxtaposing Canadian levels of illegitimacy with illegitimacy levels throughout the world.

The inquiry demonstrated the selective and conditional nature of our information regarding Canadian patterns of illegitimacy. Furthermore, many challenging avenues for further research were generated by the analysis. However, the most significant implication that emerged was the expressed need for caution in launching inquiries into the phenomenon of Canadian illegitimacy. This notion was generated because of the selective and conditional nature of past inquiries in many settings, and the consequent pitfalls and bias that resulted. A distinctively Canadian approach to the phenomenon of illegitimacy is certainly warranted in future Canadian research.

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CHAPTER 1

INTRODUCTION

1.1 Nature and Purpose of the Investigation.

. . . The bastard, like the prostitute, thief, and beggar, belongs to that motley crowd of disreputable social types which society has generally resented, always endured. He is a living symbol of social irregularity, an undeniable evidence of contramoral forces; in short, a problem--a problem as old and unsolved as human existence itself (Davis, 1939a:215).

For most of history, illegitimacy has been treated as a moral and legal problem; and society has seemed more interested in punishing the unwed mother and her illegitimate child than in understanding the social, economic, and psychological forces which have placed them in a deviant social position. Family organization in Western society is, generally speaking, based on Roman institutions as they were transmitted by the Universal Church, with the emphasis placed on paternal preponderance. Frank H. Hankins summarizes the Roman period as follows:

. . . Viewing woman as the chief source of sin, Christianity tended to degrade motherhood, to accentuate masculine supremacy and to maintain a double standard of morality. It thus inflicted an often unbearable cruelty upon an unmarried mother and an almost certain degradation upon her offspring (Hankins, 1932:579).

Given such a heritage, the early preoccupation of social science with the irregular and contramoral aspects of human life were generally unscientific. Indeed, it has been only in the present century that researchers have attempted to go beyond a moralistic stance to seek

insights into this so-called "social problem." However, scientific interest in a social phenomenon such as illegitimacy emerged only when the moral norms by which it is judged evil were themselves subjected to analysis rather than taken for granted. It was not until the moral aspects themselves were subjected to scrutiny that scientific validity could be achieved, for the contramoral is always functionally related to the moral, illegitimacy to legitimacy (Davis, 1939a:215).

The first two decades of the 20th Century reflect the impact of evolutionary theory upon research, with concepts such as mental retardation and genetic inheritance being the predominant explanatory variables associated with "illegitimate birth" (Kronick, 1962:234). During the 1930's, environmental conditions became the focus of attention; however, the emphasis shifted to an examination of "sub-cultures" during the 1940's. The 1950's saw extensive employment of a psychological perspective in illegitimacy research. And then, in their attempts to account for as many variables as possible, researchers of the 1960's considered both social and psychological factors. The emphasis on a multi-variable approach has continued into the first year of the 1970's; however, the stress appears to be somewhat altered in that researchers recognize the utility of multi-discipline research, with scores of variables being studied.

The most central concern of this investigation is to develop a more holistic approach, and consequently to create a different perspective from which to examine the social phenomenon of illegitimacy. Such a perspective may be useful in gaining fresh insights into this so-called "social problem." Nevertheless, the design of this inquiry will

not ignore past approaches and relevant elements shall be used when appropriate. Vincent has succinctly summarized this point of view as follows:

. . . The first suggestion concerns the need for a "Pisgah perspective," an overall or mountain-top view of current increases and trends in illegitimacy. Without such a perspective, the teacher may be immobilized by pessimism and may give youth the impression that illegitimacy is far more prevalent than it actually is; thereby aggravating the problem by inadvertently influencing some students to regard illicit pregnancies as a normal expectation. Unfortunately, popular sources of information about illegitimacy usually (a) confuse an increase in numbers with an increase in percentage or proportion; (b) exaggerate the proportion of all illicit births which occur among teen-agers; and (c) overlook the limits imposed on national data by having to rely on estimates for 15 states [U.S.] where illegitimacy is neither recorded nor reported (Vincent, 1962:290).

1.2 Theoretical Considerations.

No attempt to "explain" illegitimacy shall be made in this investigation. Even a moderate effort to account for the multitude of possible elements associated with the social phenomenon of illegitimacy would necessitate a theoretical overview capable of handling elements from social, psychological, social-psychological, economic, historical, and many other disciplines. Limited by time, resources, and the capacity of a solitary researcher, a much more realistic scope must be accepted. Investigations on illegitimacy often distinguish between three approaches: (1) "cultural absolutism," (2) "cultural relativism," and (3) "cultural relativism" (Roberts, 1966a:11-18). Since this thesis is primarily exploratory and descriptive in an attempt to improve the general perspective from which future studies may launch investigations on illegitimacy, a portion of the study is devoted to a cross-cultural examination of illegitimacy. At present, the

cultural relativistic component appears most insightful. Cultural relativism refers to a position which claims that illegitimacy "is subject to the value system of the group within which it occurs and that various cultural groups may not have norms opposed to illegitimacy" (Roberts, 1966a:14). Nevertheless, the remaining two approaches-- "cultural absolutism" and "cultural relationism"--shall not be ignored. Cultural absolutism is a view which sees legitimacy as an absolute norm, for instance, Malinowski's Principle of Legitimacy. While cultural relationism views the Principle of Legitimacy as universal, it stresses that the phenomenon of illegitimacy is related not only to this principle but to closely related norms. The author remains cognizant of their existence and intends to incorporate these notions when useful.

When illegitimacy is examined from an international, or cross-cultural viewpoint, the large differences in the frequency with which the phenomenon occurs in various cultural and sub-cultural groups has led to the questioning of whether or not illegitimacy is always a "social problem" or an indication of "social deviation." Instead, it is argued that illegitimacy is culturally relative and, like many other social phenomena, is subject to the value system of the group within which it occurs and that various cultural groups may not have norms opposed to illegitimacy. Norms and values appear to operate as confounding variables. They not only affect behavior, but intervene between behavior and its own effects. Past studies stressing cultural relativism have abundantly demonstrated the former but hardly touched upon the latter. Yet it is the relativism of effects, or of

consequences, that offers one of the most intriguing possibilities for theory (Christensen, 1968:220). In essence, then, cross-cultural analysis has provided points of reference for a better understanding of one's own culture. It has generated the concept of cultural relativism, discovered quasi-universals, and also tested the varying effects of culturally unique phenomena--though, in all of this, much more remains to be done (Christensen, 1968:215). Like divorce, illegitimacy is understandable only in the light of its entire sociological setting in each community; it cannot therefore be viewed as an index of sexual morality (Hankins, 1932:579). A cross-cultural understanding, however broad, will aid in the understanding of intra-cultural variations in illegitimacy.

1.3 The Procedure of Inquiry.

Little extensive research has been conducted on Canadian illegitimacy. Past studies in other countries do not serve as adequate models for the framework for future Canadian research into this topic. The lack of a holistic, aggregate-level approach to Canadian illegitimacy raises one important question: "Where should the researcher begin?"

Broadly, the inquiry of this thesis can be divided into three parts: (1) an historical and statistical examination of selected demographic components associated with Canadian illegitimacy; (2) an overview of world patterns of illegitimacy and the comparison of a society with high levels of illegitimacy (Jamaica) with a society with low levels of illegitimacy (Canada), relatively speaking; and (3) a brief theoretical consideration of three common sociological approaches

to illegitimacy research. Considerable emphasis is placed on the statistical and demographic features of the discussion to ensure that the observed changes in illegitimacy are in fact "real" changes. Ultimately, statistical, demographic, and theoretical issues tie together in a mutually reinforcing bond. The essential purpose of the investigation is to gain some understanding of Canadian illegitimacy in a "world community." Research should not exclude cross-cultural analysis simply on the basis of the extreme problems often encountered. In the following statement, Shirley Hartley makes exactly such a plea:

While we must recognize the problems inherent in international comparisons of illegitimacy, the subject is of such significance that we cannot and we need not wait for more, or more perfect, data to be available. Rather, an increased interest in maximizing whatever comparative data we do find, may, in itself, aid in the improvement of methods and reliability of collection and publication of relevant information (Hartley, 1970:95-96, underscoring added).

This thesis does not endeavor to provide the "answers," but it does endeavor to suggest viable avenues for future research, based on the statistical-demographic and theoretical issues raised.

For the analysis of demographic factors associated with Canadian illegitimacy (Chapter 3), the methodology proposed by Kumar (1969) shall be utilized. Essentially, Kumar has presented a standardized and more sensitive methodology by which to study illegitimacy. Parallel to Kumar's aims, this study shall endeavor: (1) to identify some of the demographic factors, the interaction of which is associated with an observed level of illegitimacy; and (2) to determine the relative contribution of these demographic factors to an observed change in the level of illegitimacy between two census dates. However, no attempt

shall be made to determine the exact contributions of each of the demographic factors in terms of their independent and interaction effects. The analysis shall be conducted for Canada as a whole and selected provinces, depending upon data availability. However, the specific requirements for data in order to adopt Kumar's methodology makes its use untenable at a cross-cultural level. Illegitimacy rates are valuable indicators of the prevalence of births out of wedlock within the unmarried population; however, they are seldom available (especially in an age-specific breakdown) outside the industrialized nations (Hartley, 1970:96). Consequently, a methodology which is less sensitive than Kumar's must be sought to conduct the initial portion of the cross-cultural analysis. Shirley Hartley (1970) has presented a useful standardization technique for the analysis of cross-national variations in illegitimacy. As far as possible, such an approach will be utilized in the initial examination of cross-national variations in illegitimate births for selected countries within Africa, North and South America, Asia, Europe, and Oceania.

Although the author would deny the adoption of a "functional" perspective, the procedure of inquiry is exemplified by the phrase: "the sum of the parts need not necessarily be equal to the whole." An understanding of the whole may improve the understanding of the parts. Such a view is supported by Christensen's statement that:

In nature, it frequently happens that two or more elements joined together will produce something new. Chemical compounds, for example, are likely to possess properties unlike the elements that compose them and so give off light, heat, or energy. In the biological world, there is a joining in sexual reproduction to produce offspring. Similarly, in the social domain we know that a community is more than its people or its area and that

a sociologically defined group is more than either a category or an aggregation. When diverse elements are brought together, there sometimes are reactions which make the sum more than its parts (Christensen, 1968:214, underscoring added).

By examining whatever generalizations might be generated from the empirical data studied, and then relating these empirical generalizations to conceptual and theoretical formulations, perhaps some insightful propositions may emerge to guide future studies. However, only when such propositions become interrelated into some meaningful whole can it be said that a theory exists. The goals of this investigation are much more moderate. However, some attempt shall be made to link the cross-cultural analysis with the more substantive Canadian analysis--though with the warning that this is only illustrative and that the resulting findings will need further testing and refining.

1.4 Rationale for the Approach.

An important feature of this thesis is the attempt to approach the phenomenon of illegitimacy at a macro-level of analysis. Even a superficial and hasty examination of the literature reveals that few writers concerned with illegitimacy have properly identified the unique features of the population that they have studied. Kronick (1962) has reviewed some of the problems of past studies. Four of her more salient criticisms are summarized in the following statements: (1) the inadequacy of many studies in obtaining a randomly selected sample of unmarried mothers and the relative ease of studying the residents of a given agency or maternity home; (2) many studies suffer from the handicap of researcher bias or interpretive bias. Researcher bias can limit the range of variables studied and can result in the selective

documentation of an hypothesis rather than more rigorous and impartial testing with the data; (3) few studies move beyond the identification of relevant variables to utilize statistical techniques in order to determine the relative importance of the isolated variables; and (4) many studies fail to relate the behavior under consideration to other forms of social behavior or to integrate findings about unmarried mothers with other theoretically relevant knowledge in the social sciences (Kronick, 1962:234-238).

Essentially, research on illegitimacy has been limited, and almost stymied, due to the nature of the questions asked (or not asked), the population from which the data were collected, the selection of the variables, and the analysis to which the data have been subjected. A new approach is warranted. Vincent suggests that efforts to understand and decrease illegitimacy are impeded when the emphasis and publicity given to "very young" unwed mothers imply attributions of causality and exclude as many as two-thirds of contemporary unwed mothers (Vincent, 1961:61). He re-emphasizes the importance of this notion in his concluding remarks:

The failure to examine these multiple, indirect sources of favorable definitions of illicit coition deflects attention from the contradiction inherent in the simultaneous encouragement of cause (illicit coition) and censure of result (illicit pregnancy). This contradiction reflects the interrelations of social mores, definitions of social problems, and scientific inquiry into social problems. It demonstrates the necessity of formulating theoretical and methodological frameworks for research in illegitimacy that are not subordinate to the values, goals, and definitions of social problems of the members of any one socio-economic stratum or professional group; and the need to examine the mores predetermining what behavior, by which individuals, represents a social problem to whom. When these mores

are not explicitly stated, and examined, research in illegitimacy tends to be dominated by the like-causes-like fallacy, and to focus selectively on only those social practices which have been defined as "bad" by the same value framework that has defined illegitimacy as "undesirable" (Vincent, 1961:244-245, underscoring added except for "encouragement of cause" and "censure of result").

It then becomes imperative that future studies consider carefully the problem to be researched and, in examining the general problems, to consider the broader relations between illegitimacy as a form of social behavior and the wider social structure. Research should establish the relative importance or the magnitude of relations among the variables investigated, thus moving closer to a knowledge of the related factors as a basis for the prediction of human behavior. At present, there is a multiplicity of "explanations" for illegitimacy, with few, if any, rules for choosing among them. A major concern of this thesis is to contribute to the development of a framework which may enhance understanding of the underlying variables operating in association with the social phenomenon of illegitimacy.

1.5 Format of the Thesis.

The 2nd chapter examines the sources and limitations of the data; the problems related to measures of illegitimacy; and the methodologies adopted. In the 3rd chapter, an in-depth analysis of selected demographic factors associated with Canadian illegitimacy is examined in an historical perspective. An overview of world variations in illegitimacy was outlined in the first portion of Chapter 4. In the latter part of Chapter 4, Jamaican levels of illegitimacy are compared with Canadian levels of illegitimacy as examples of countries with high versus low

levels of illegitimacy, respectively. In the concluding chapter, an attempt is made to integrate the findings of the investigation, and furthermore to suggest viable avenues for future inquiry. Appendices to the investigation are provided to demonstrate the internal workings of the methodologies utilized.

1.6 Limitations of the Study.

The stigma attached to the recording of illegitimate births always raises doubts as to the quality of illegitimacy statistics. Opportunities to circumvent the recording of such births exist today, as in the past. The most prominent obstacle in the development of this investigation will surely be the limitations and scarcity of aggregate-level data--both intra- and inter-societal. In discussing the problems faced and the strategies developed in national family research, Reuben Hill has made the following statement:

. . . The researchers relying on secondary sources for their data such as censuses and vital statistics are more frequently circumvented by the meagre conceptualization of the categories used in marriage, divorce, and family statistics collected by official sources. Nevertheless, with some ingenuity, propositions of some theoretical import can be teased out and tested within several countries.
[. . .] Christensen has also shown ingenuity in dealing with secondary records cross-culturally (Hill, 1962: 430-431).

Although Hill was initially skeptical of the use of secondary data, he terminated on an optimistic note by suggesting that the ingenuity of the researcher ultimately determines the impact of the study. An optimistic attitude is adopted toward the analysis of secondary data in this investigation. Consequently, no attempt was made to collect original data. Data presently available from government agencies, books

and scholarly articles will suffice. In an attempt to avoid the selective bias created by obtaining data through facilities for unwed mothers, this investigation will confine the analysis to aggregate data on the provincial and national levels. Furthermore, no attempt will be made to formulate and test hypotheses. However, the formulation of possible propositions and hypotheses for future testing is an ultimate goal of the investigation. With little or no intensive research on Canadian illegitimacy, the primary aim of this study lies in the reduction of error and bias accompanying research into illegitimacy. The skepticism generated in reading other illegitimacy research makes such goals especially significant if future study into Canadian illegitimacy is to avoid similar pitfalls. Therefore, even if this thesis does little more than illustrate the selective and conditional nature of current information about illegitimacy in Canada, such an inquiry will be a preliminary, if not a major, contribution.

CHAPTER 2

DATA AND METHODS

2.1 The Sources of Illegitimacy Statistics.

Whereas a census is a static, cross-sectional view of the population at a given moment of time, a registration system undertakes to measure movement by making a record of important demographic events such as birth, death, marriage, divorce, and migration. A vital event is registered by the filling out of an official document that certifies that the event has taken place. The legal purpose of registration is not the collection of statistics, but the creation of an official record that serves as evidence of citizenship, marital status, death, and the like (Bogue, 1969:106). As a by-product of the legal requirements, three major types of record systems provide data for the demographer. These are the vital registration system, the population register, and the administrative records of various government offices (Hauser and Duncan, 1959:61).

The developed nations are in the advantageous position of having fairly reliable data from both the census and vital registration. However, the developing nations are less well off. Cho's categorization of countries according to their reliability and availability of demographic data indicated that 77 of the 136 countries considered had inadequate vital registration systems; and moreover, the probability of substantial improvement in the foreseeable future is negligible

(Cho, 1964:360-366). Nevertheless, vital registration is the primary (and often only) source of statistical data on illegitimate births. Although the direct questioning of the legitimacy status on census questionnaires might provide helpful information, it is never attempted because of the sensitivity of the question and the social stigma attached. Also, the number of additional questions, beyond the basic information asked in a census, must be determined by resources available and also by the varied interests of governmental and non-governmental data users. No matter what the source, the analyst is always confronted with problems related to the availability of reliable statistics for intra-societal comparisons.

Although far from complete, the data on Canadian illegitimate births paints a much more optimistic picture. In Canada, the collection of vital statistics began, as in England, with the registration of baptisms, marriages, and burials by the ecclesiastical authorities (D.B.S., 1949:185). However, prior to 1920 it was impossible to compile a satisfactory series of vital statistics for Canada as a whole. Obstacles such as incompleteness of registration, lack of uniform classification, and choice of the fiscal instead of the calendar year as the time unit made a national compilation virtually impossible. Probably the most serious obstacle was the variation in provincial legislation:

When, then, as a consequence of the Departmental Commission's report of 1912, the office of "Dominion Statistician" was created on June 19, 1915, this officer was confronted with the situation that "interprovincial comparisons of data or their combination into Dominion totals" were impossible. He saw the remedy in uniform standard legislation and administration by the provinces, with a central Dominion office as intermediary

agent for the maintenance of the standard and as clearing house for the compilation and tabulation of results (Kuczynski, 1930:17).

In 1920, eight provinces entered into a co-operative system for the production of national vital statistics. Quebec was included in 1926, while Newfoundland continued to collect its own statistics until it allied with the Confederation in 1949.

2.2 Definitions of Illegitimacy: An Impediment to Data Comparability.

No matter how varied the definition and rituals of marriage and kinship structure, virtually all societies distinguish between legitimacy and illegitimacy of births and apply sanctions to the unmarried parents and, in many cases, to the children of the latter. The two are jointly defined, illegitimacy involving the absence of those conditions by which a human community defines legitimacy--that is, the condition of being a child presumably lawfully begotten through birth in wedlock, and having specified filial rights and obligations. The importance of distinguishing between "legitimate" and "illegitimate" is exemplified by Kingsley Davis in the following words:

If the bastard cannot descend legitimately (except through the special mechanisms of acknowledgement, adoption, or legitimation), then to which parent will he be socially attached for domicile and other necessary matters (Davis, 1939a:224)?

Formulating a definition of "illegitimacy" from such a perspective pre-disposes the methodologist's definition, since any definition of "illegitimacy" is bound by the legal connotations surrounding the term. The United Nations Multi-lingual Demographic Dictionary describes the phenomenon of illegitimacy as follows:

Births are sometimes classified by legitimacy.¹ In general the classification depends upon the marital status of the mother at the time of the conception or confinement. Strictly speaking a legitimate child² may be defined as one whose father and mother were married to one another at the time of conception and a legitimate birth³ as the delivery of such a child; other births or children are illegitimate.⁴ It is general practice, however, to consider as legitimate the children who result from pre-marital conceptions,⁵ pre-nuptial conceptions⁵ or ante-nuptial conceptions⁵ (i.e., conception occurring before marriage) provided that the parents are married to each other at the time of the birth (U.N. Department of Economic and Social Affairs, 1958:36, footnotes pertain to original text).

For statistical purposes, the United Nations have chosen such a perspective, defining "legitimate" as those births characterized as legally legitimate at the time of registration; that is, to births-within-wedlock as determined by the laws of each country (U.N. Department of Economic and Social Affairs, 1966:31). Births with legitimacy not stated are assumed to be illegitimate. Then "illegitimacy" refers to legal illegitimacy recorded on the birth record, that is, it is a characteristic of a child born out of legal wedlock, as determined by the laws of each country. Therefore, illegitimate births are assumed to include births to persons in consensual unions, or in unions celebrated in a manner other than the legally prescribed one as, for example, by a religious ceremony instead of the prescribed civil contract (U.N. Department of Economic and Social Affairs, 1966:31). Nevertheless, whatever definition is ultimately decided upon, even slight variations impair statistical comparison. As a result, many writers have circumvented an explicit definition of a term by simply leaving the reader with the understanding that that which is not legitimate must obviously be illegitimate.

Like many of its predecessors, this study is necessarily limited by its inability to resolve the definitional dilemma. The author seeks refuge in the following quotation:

We are forced, at this stage in the study of the phenomenon, to a guarded acceptance of each society's own definition of illegitimacy, which means that we must accept their definition of legal marriage and the recording by them of marriages and of births as legitimate or illegitimate. We do not expect any registration or census system in the world to be perfect. Nevertheless, we expect the data to be highly correlated with the actual incidence of illegitimacy and certainly differences in the registration system cannot account for all of the natural differences in levels of illegitimacy. Systematic errors that do occur, moreover, are over-whelmingly likely to be on the conservative side as far as our study is concerned. It is highly unlikely that any legitimately conceived child would be registered as illegitimate. Yet, any mother who can find a way to do so is certainly motivated to register an illegitimate child as of legitimate birth (Hartley, 1970:97, underscoring added).

The author remains convinced that the inability to satisfactorily account for the increasing prevalence of illegitimacy clearly demonstrates the need for additional research into not only the associated and causative factors, but also into the techniques and methodological tools needed to investigate such a phenomenon.

2.3 An Evaluation of the Reliability of Illegitimacy Statistics.

Needless to say, it is essential for statistical purposes that a uniform record be available for each vital event in order to permit the compilation of statistics. However, the notion of a "live birth" is especially difficult to treat as a statistical record (Barclay, 1958:9). Life is very uncertain in the first few moments and days of infancy. Empirical evidence suggests that illegitimacy sharply reduces

the chances of survival both before and after birth, and that still-births are more frequent among conceptions outside of wedlock, and illegitimate infants have a mortality rate substantially in excess of legitimate children (U.N. Department of Economic and Social Affairs, 1954:14-15). Consequently, a great many cases cannot be classified consistently without detailed criteria and rules. Since the responsibility for the reporting of vital events rests with the public, more than in a census enumeration, co-operation of the public is decisive in achieving a complete record of births. In dealing with events where a social stigma is attached, social customs sometimes may lead to non-registration. There may be a deliberate attempt on the part of the mothers to avoid reporting illegitimate births or to report them as legitimate (U.N. Department of Economic and Social Affairs, 1955:19). Then it seems not unreasonable to expect that measures of illegitimacy will continue to underestimate the true figures as long as the social stigma remains.

Since data reliability is a major concern of all research, four positive steps toward improved reliability include: (1) recognizing the sources of error; (2) improving data gathering; (3) adjusting the data and improving measurement techniques; and (4) changing the legislation related to data gathering. Demographic research serves to illustrate the utility of adjusting data. If a census figure is in error--due to under-enumeration, for instance--the annual estimates will reflect the same error, but the error will be a constant. Errors in vital statistics, on the other hand, may have a cumulative effect. For example, if there is an under-registration of births every year, so that the recorded annual natural increase is too small, the

consequent error in the population estimates will grow larger in each successive year. By the end of, say, a ten-year period, both the estimated size of the population and the estimated amount of its growth since the census date may be considerably below the truth, even though the amount of error in the birth statistics for any one year is not very great (U.N. Department of Economic and Social Affairs, 1955:18). In an effort to reduce such error, it is sometimes possible to revise data that are known to be defective by utilizing some standard of adjustment (Barclay, 1958:87). For instance, Galle and Cutright adjusted their data in order to reduce the age-selective under-estimation of illegitimate births (Galle and Cutright, 1968:3). Besides including illegitimate births to women under age 15 in the 15-19 age group, and those to women over 44 in the 40-44 age group, births to women of unknown age were allocated to one of their six standard age groups between 15 and 44 years.

In addition to the problem of data availability, the lack of standardized procedures for collecting and tabulating illegitimacy data has resulted in a lack of uniformity of reporting data, even within the same reporting system. For example, the accuracy of comparisons of the various measures of illegitimacy among the states in the U.S. is affected by: (1) the accuracy of the response; (2) the completeness with which the legitimacy item is answered on the birth certificate; and (3) the frequency with which women leave their state of residence to have an illegitimate child in a non-reporting state (NCHS, 1968:85). When cross-cultural analyses are attempted, such difficulties are accentuated. Furthermore, other problems encountered in cross-cultural

comparison include: (1) fundamental or accidental differences between countries in the legal basis for illegitimacy; (2) differences between countries in the reference date for the definition of illegitimacy; (3) variations in the type of union which establishes legitimacy; and (4) the type of national attitude toward illegitimacy (U.N. Department of Economic and Social Affairs, 1966:31).

Registration of live births in Canada is under the jurisdiction of the provincial governments. Furthermore, as provided under the Dominion-Provincial agreement (1920) on the collection of vital statistics, the registration of births, stillbirths, marriages, and deaths continued to be the responsibility of the provinces. The appropriate Vital Statistics and related Acts required not only that the events themselves be reported within a prescribed time, but also that certain uniform items of statistical information be recorded (D.B.S., 1967:3). Uniformity in compilation was not demanded for all statistical information and, consequently, the provinces were left to decide what type of additional information they wanted besides certain basic vital events:

An essential part of this scheme of co-operation was that the registration of births, deaths, and marriages be made on standard registration forms to be supplied to the provinces by the Dominion Bureau of Statistics. Copies of the completed forms were to be forwarded to the Dominion Bureau of Statistics. From these were compiled the national statistics and the main tabulations required by the provinces for insertion in the Annual Reports made to their respective Legislatures, thus ensuring uniformity in the treatment of the material. The operation of the arrangement did not in any way prevent provinces or cities from making such additional compilations as they might desire (D.B.S., 1949:186, underscoring added).

Then, according to a revised agreement adopted in 1945, uniform national

and provincial annual tabulations were put into effect beginning in 1952. Concurrent with the revision, major changes to the annual report consisted of: (1) reduction in some previously published tables; (2) rearrangements, consolidation and condensation of some existing tables; (3) the addition of tables showing international comparisons; and (4) increased historical and trend data (D.B.S., 1952:3). Unfortunately, the second revision was instrumental in reducing the nature and quantity of data tabulated according to legitimacy status of births. Perhaps such a decision was partly a reflection of the awkwardness created by asking direct questions of the legitimacy status of a child. As a result, the provinces vary widely in the type of data available on illegitimate births. Nevertheless, some provinces, such as Alberta, continue to pose the direct question on legitimacy on the birth certificate. The Alberta certificate words the question as follows: "Are the parents married to each other?" Nevertheless, it is highly likely that the direct and formal nature of such a question elicits concealment which ultimately diminishes the completeness of illegitimacy statistics.

An interesting procedural innovation in the State of California has allowed for an estimation of the extent of illegitimacy directly from birth certificates (Berkov, 1968:473). The method is best described by Berkov as follows:

The new method for counting illegitimate births does not depend on the addition to the birth certificate of any question about legitimacy. [. . .] Since about 1916, no such question has appeared on the California certificate, and strong opposition has been voiced against adding the question. Although the need for statistical information about illegitimacy has been recognized, the feeling has been that this need was subordinate to the need to protect the unwed mother and her child from stigma; and that further stigma would result from inclusion of an explicit

question, particularly since birth records in California are available to the public. Efforts to make the medical and health section of the birth certificates confidential have not been successful.

How, then, is it now possible to count illegitimate births? The answer is that it has always been possible to identify certain of the illegitimate births just from the information given on the certificates, but a state-wide count of such records was not practical and probably would not have been very accurate until legislation was passed in 1965, which provided for the identification in the local health department of a general category of births including, but not limited to, those apparently out of wedlock. The aim of the legislation was to protect from unwanted publicity and commercial solicitation not only unwed mothers, but also mothers of infants who die, who have congenital malformations, who have some similar type of problem or new mothers who simply do not want to be bothered by solicitors (Berkov, 1968:473-474).

The technique is essentially a form of matching and record linking documents (e.g., marriage and birth certificates) and/or matching and linking particular items within one document (e.g., last names of mother and father on birth certificates).¹ Apparently this innovation provides quite reliable results. Probably the method of gathering statistics on illegitimacy in California provides more complete coverage in counting illegitimacies because other methods derive statistics on illegitimacy from direct questions which invite concealment of the child's legitimacy status. If Berkov's suggestions are valid, the implications are profound indeed. From a legislator's point of view, improved illegitimacy statistics could be provided without subjecting individuals to the embarrassment of direct questioning. Quite simply, the needs of the

¹Newcombe and associates have extensively matched and record-linked Canadian vital statistics data. As yet, they have not examined the illegitimacy question; however, the potential for gathering illegitimacy statistics in an indirect and discreet manner appears very plausible. For a description of their procedural techniques see an early article by Newcombe (1959), and many subsequent articles.

researcher could be satisfied without sacrificing any of the confidentiality and secrecy desired by the individual and the government.

2.4 Problems Encountered in Using Common Measures of Illegitimacy.

Ratios and rates are commonly employed in measuring the instance of illegitimacy; however, the researcher is faced with problems inherent in both these indices. The following discussions illustrate some of these problems.

Indecision! A Feature of Illegitimacy Measurement. In addition to the troublesome question of the reliability of illegitimacy statistics, efforts to improve measurement techniques have been scanty. Little agreement exists regarding which method is most suited to measuring the phenomenon of illegitimacy. Illsley and Gill are convinced that the illegitimacy ratio (the number of illegitimate births per 1,000 total births) is preferable to the illegitimacy rate (the number of illegitimate births per 1,000 unmarried women between 15 and 49 years of age) (Illsley and Gill, 1968a:415). Kumar (1969) has questioned the validity of the illegitimacy ratio, contending that it fails to measure the "level of illegitimacy." He asserts that the illegitimacy ratio can be a misleading indicator of the trend in illegitimate births; therefore, the illegitimacy rate is the preferred measure (Kumar, 1969:107). To increase the uncertainty, Hartley has suggested that it does not really matter whether one uses the illegitimacy rate and/or ratio (Hartley, 1966:536). Instead, the cultural "definition of the situation" should determine the amount of concern for, as well as be one of, the factors affecting the rate. By way of compromise, Hartley's

tabular presentation often presents the illegitimacy ratio and rate side-by-side. However, the problems are inherent in the nature of rates and ratios. Either is useful, provided the researcher understands the limitations of each technique.

The Problem in General Terms. Statistical data provide the raw materials for the demographer. Initially, the data are presented in "absolute" terms, showing how many people or events were found at a certain date or period. However, it is generally more useful to measure facts in relation to some other number--that is, in "relative" terms through rates and ratios. A rate is a "dynamic" or longitudinal concept which involves change over a given time interval, whereas a ratio is a "static" or cross-sectional concept which describes a position at a given point in time. Two readily apparent advantages of ratios are that they are easy to calculate; furthermore, that they provide quick and concise comparisons among corresponding sets of numbers. In part, this accounts for the emphasis on using ratios rather than rates in the study of illegitimacy. But to examine changing trends in the risk of illegitimacy over time, researchers must strive to use rates as abundantly as ratios.

The conflict between data reliability and availability clearly emerges at this point. Only a few countries have sufficient longitudinal information to initiate the same kind of analysis with rates that has previously been undertaken with ratios. Part of the difficulty arises from the so-called "problems of the denominator." This classical problem stems from the fact that vital events occur throughout the year, and it is difficult to determine to which population

they refer. The real problem of the denominator lies in the fact that researchers interested in the numerator (number of vital events) somehow do not exert themselves to obtain exact population totals (Krotki, 1965:11). It is imperative to commence with the basic assertion that the denominator must be relevant to the event being measured. The denominator must attempt to define the population most "at risk" to the phenomenon being investigated. In a ratio, problems of the denominator have similar time reference. In the case of a rate, the time element is very important; consequently the problems of the denominator are increased.

Problems with the Illegitimacy Ratio and Rate. Studies advocating the use of the illegitimacy ratio argue that its utility lies in its lack of concern with the civil state of the mother. Only the legitimacy of the birth is relevant. Illsley and Gill suggest that the illegitimacy ratio is a useful measure for assessing the impact of illegitimate births on various aspects of a nation's social structure (Illsley and Gill, 1968a:420). However, opponents of the ratio would suggest that the ratio is misleading because it declines during a period when total births rise more rapidly than illegitimate births. When using the illegitimacy ratio, it is essential to remember that two independent factors affect the numerator and denominator. Illegitimate births (the numerator) are affected by the size of the unmarried female population and the rate of illegitimacy. The total number of live births (the denominator) is primarily influenced by the factors that affect marital fertility, including changes in spacing and completed family size and the proportion of women who are married. If this

changes, the ratio will change, even if the numerator remains the same (NCHS, 1968:10).

The most common alternative to the illegitimacy ratio is the illegitimacy rate. The construction of the rate, however, requires information on the marital status of the female population which is generally not easily matched by time period with information on legitimacy status at birth. Yet the rate remains a superior measure to the commonly employed ratio of illegitimate births to total births because the rate accounts for changes in the proportions of unmarried women of fertile age. Consider the illegitimacy ratio commonly employed. Such a ratio when conceived as a proportion assumes the form: $\frac{a}{a + b}$; that is, the numerator is also part of the denominator (Barclay, 1958:20). The illegitimacy rate increases the sensitivity with which illegitimacy is measured by assuming the form: $\frac{c}{d}$, where "c" and "d" are from different universes (Barclay, 1958:20). In general, the rate would be an appropriate measure of the incidence of illegitimacy if all illegitimate births occurred to unmarried women. However, the greater the proportion of illegitimate births occurring to married women and the greater the proportion of consensual unions, the more misleading it becomes to use the number of unmarried women as the denominator. Furthermore, to calculate illegitimacy rates it is necessary that information on the marital status of the female population be available. Since the most reliable information on marital status of the female population is acquired from the census, illegitimacy rates for many countries can be calculated only for census years (Galle and Cutright, 1968:3).

An Improved Method for Utilizing the Illegitimacy Rate.

The illegitimacy rate, perhaps with some sensitizing innovations, is clearly the preferable measure:

. . . The Illegitimacy Ratio may be a good index to show the magnitude of the social problem, but when it is used indiscriminately to represent the likelihood of bearing an illegitimate child or to indicate family disorganization, sexual permissiveness, and the like, the conclusions may be incorrect. An appropriate index to measure the likelihood of bearing an illegitimate child is the Illegitimacy Rate--the number of illegitimate births per unmarried females of childbearing age per year (Kumar, 1969:92).

Within this context, Kumar has attempted to identify the demographic factors, the interaction of which is associated with an observed level of illegitimacy, and to determine their relative contribution to an observed change in the illegitimacy level. Working with the "illegitimacy rate," Kumar has developed more sensitive measures for illegitimate and legitimate fertility. He describes the approach as "a simple procedure of demographic manipulation by which the observed change in the level can be almost fully explained by performing only one or two standardizations" (Kumar, 1969:93). The following demographic factors are identified: (1) age-distribution of females in the childbearing years; (2) proportion of total females at age "x" who are unmarried; (3) age-specific rates of illegitimate births; and (4) age-specific legitimate fertility rates. The first two factors attempt to deal with the problems of the denominator by determining the proportion of the female population exposed to the risk of bearing an illegitimate child (Kumar, 1969:107). In sum, Kumar's major contribution is the development of a systematic method for analyzing data on illegitimacy.

2.5 Recommended Techniques for Analysis.

The analysis of demographic factors associated with Canadian illegitimacy (Chapter 3) was conducted, as closely as possible, with the methodology outlined by Kumar. Parallel to Kumar's aims, the present investigation shall endeavor to identify some of the factors, the interaction of which is associated with an observed level of illegitimacy. Furthermore, an attempt shall be made to determine the relative contribution of selected demographic factors in the observed changes in the levels of illegitimacy. However, no attempt shall be made to determine the exact contributions of each of the demographic factors in terms of independent and interaction effects.

The specific requirements in terms of data to utilize Kumar's framework make his approach untenable at a cross-cultural level of analysis. Illegitimacy rates are valuable indicators of the prevalence of births out of wedlock within the unmarried population; however, they are seldom available by age-specific groups outside the highly industrialized nations (Hartley, 1970:96). Consequently, the cross-cultural analysis requires an alternative methodology. Hartley (1970) provides the present study with such an alternative. Although "cruder" than comparisons based on illegitimacy rates, Hartley's approach appears to be somewhat more enlightening than a simple comparison of illegitimacy ratios. The procedure involves the standardization of illegitimacy ratios for countries with inadequate data according to the illegitimacy rates of some model country for which more complete statistics are available. Hartley's main objective would appear to be the broadening of knowledge of the variations in the levels of illegitimacy

internationally. Some researchers criticize such "general" approaches on the grounds that intensive knowledge of our own culture is required before one is justified in analyzing other cultural systems. However, this author would concur with Gideon Sjoberg that "the general and stable elements in our own culture can best be understood when the latter is compared with divergent cases" (Sjoberg, 1955:114).

The initial cross-cultural comparison (Chapter 4) will parallel Hartley's analysis. Countries were chosen from Europe, Asia, Africa, Oceania, and North America on the basis of two criteria: (1) the reliability of their data, as classified by Cho (1964); and (2) some representation of the variations in the crude birth rate. This was done to achieve a representative picture of world variations in legitimate and illegitimate fertility.

CHAPTER 3

HISTORICAL ANALYSIS OF SELECTED DEMOGRAPHIC COMPONENTS ASSOCIATED WITH CANADIAN ILLEGITIMACY

3.1 General Trends: 1921-1968.

Compared with many nations, illegitimacy in Canada is relatively low, assuming, of course, that recorded illegitimate births are representative of the actual extent of illegitimacy. Table 3.1 indicates that the percentage of all live births which were classified illegitimate has increased almost continuously between 1921-1968 (1951 being

TABLE 3.1

PERCENT ILLEGITIMATE OF TOTAL LIVE BIRTHS, CANADA
1921, 1931, 1941, 1951, 1961, 1966 and 1968

<u>Year</u>	<u>Percent (%)</u>
Average 1921-25	2.2
1931	3.5
1941	4.0
1951*	3.8
1961*	4.5
1966*	7.6
1968*	9.0

*Illegitimacy does not refer to births conceived out of wedlock but those in which parents reported themselves as not having been married to each other at the time of birth or registration and, in the case of Ontario, since 1949, those in which the marital status of the mother was reported as single.

Sources: D.B.S. (1970), Table B8, p. 81.
D.B.S. (1963a), Table B8, p. 103.

slightly less than 1941). In 1968, the highest proportion of illegitimate births (9.0 percent) was recorded. This was 6.8 percentage points higher than that observed in 1921-25 (2.2 percent). However, it is dangerous to rely solely on such a crude index of illegitimate fertility as percent of total live births which were illegitimate. Henripin warns that if the fertility of all women diminished while the percentage of illegitimate births remained constant, then the fertility of unmarried women has also diminished (Henripin, 1968:333). Factors such as the following may be intervening: (1) the age composition of females 15-49; (2) the proportion of women married; (3) levels of legitimate fertility; and (4) levels of illegitimate fertility.

Tables 3.2 and 3.3 present the overall variations in illegitimacy for Canada and selected provinces.² The trend suggested by both the illegitimacy ratios (Table 3.2 and Figure 3.1) and rates (Table 3.3 and Figure 3.2) is a continuous increase in Canadian illegitimacy over the period 1921-1966. However, the ratios show only a slight increase between 1941 and 1951, whereas the rates show a marked increase for the same period. In all likelihood, the difference in the two indices (the illegitimacy ratio and rate) occurs because of changes in the overall probability of being single in the childbearing ages ($\sum f_x q_x$). This confirms the need for in-depth analysis before drawing substantive conclusions about the historical trends of Canadian illegitimacy.

In general, provincial variations, as measured by both rates

²Newfoundland, the Yukon, and the North West Territories were excluded from the analysis because the necessary data were either incomplete or not available.

TABLE 3.2

TREND OF ILLEGITIMACY RATIOS
CANADA AND PROVINCES
1921-1966

Area	Year					
	1921	1931	1941	1951	1961	1966
Canada	19.4	29.4	36.2	36.6	44.0	74.8
Index*	100.0	151.6	186.6	188.7	226.8	385.6
British Columbia	11.8	27.4	45.5	57.8	70.0	119.7
Index*	100.0	232.2	385.6	489.8	593.2	1,014.4
Alberta	-----	36.3	41.0	46.7	61.6	103.8
Index*	-----	100.0	112.9	128.6	169.7	285.9
Saskatchewan	6.4	29.6	35.6	44.2	58.6	100.1
Index*	100.0	462.5	556.2	690.6	915.6	1,564.1
Manitoba	22.4	35.3	34.4	38.3	62.4	101.7
Index*	100.0	157.6	153.6	171.0	278.6	454.0
Ontario	24.0	39.9	46.5	33.0	34.2	63.9
Index*	100.0	166.3	193.7	137.5	142.5	266.2
Quebec	-----	14.5	20.3	26.0	32.2	53.3
Index*	-----	100.0	140.0	179.3	222.1	367.6
New Brunswick	17.8	33.1	35.0	39.7	43.5	68.9
Index*	100.0	185.9	196.6	223.0	244.0	387.1
Prince Edward Is.	20.4	37.3	46.4	51.6	47.2	65.7
Index*	100.0	182.8	227.4	252.9	231.4	322.0
Nova Scotia	30.2	53.9	69.9	65.0	67.9	101.1
Index*	100.0	178.5	231.5	215.2	224.8	334.8

*Base year=1921; except for Alberta and Quebec=1931.

Source: Calculated. See Appendix A for sources of base data.

FIGURE 3:1.

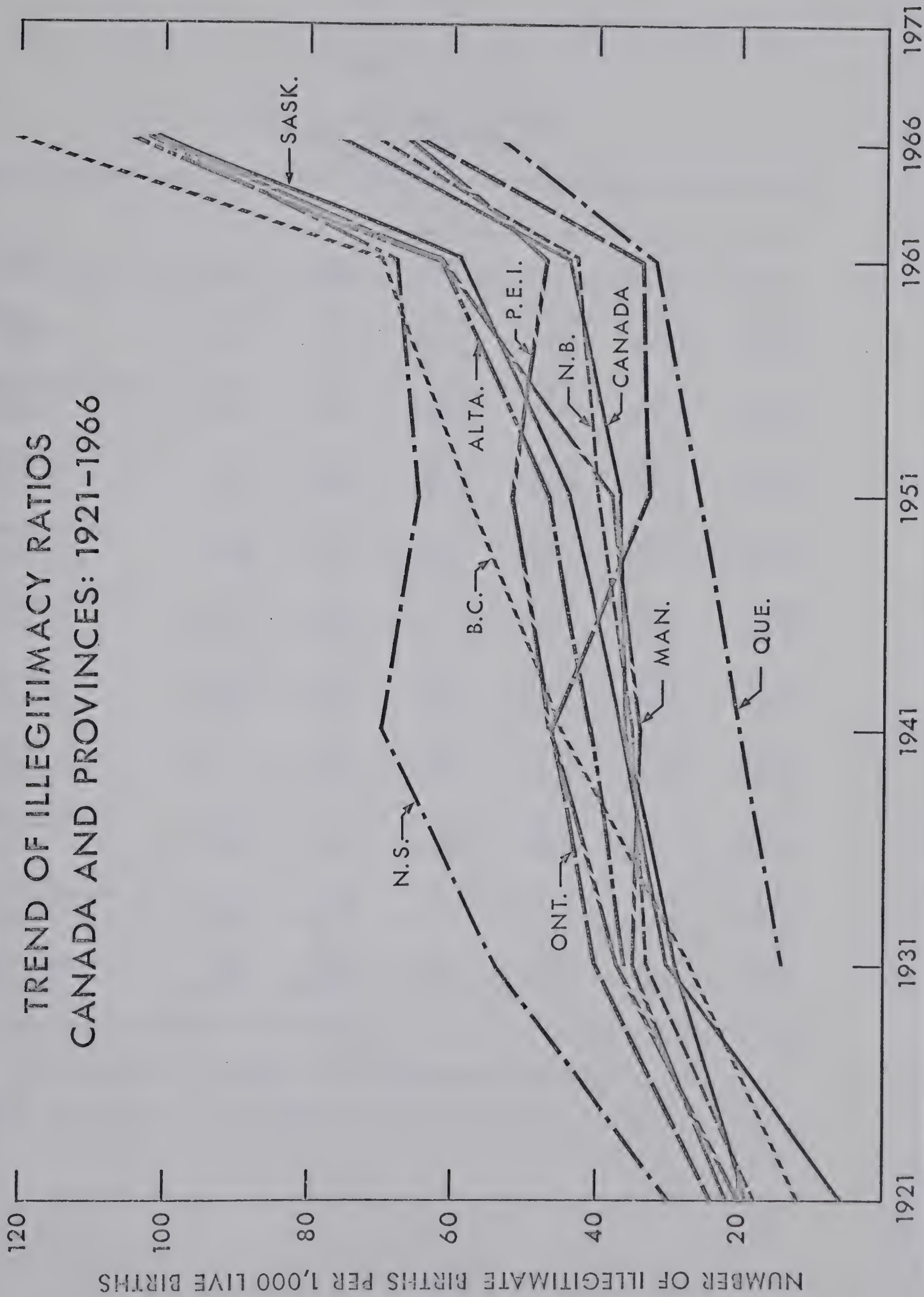


TABLE 3.3

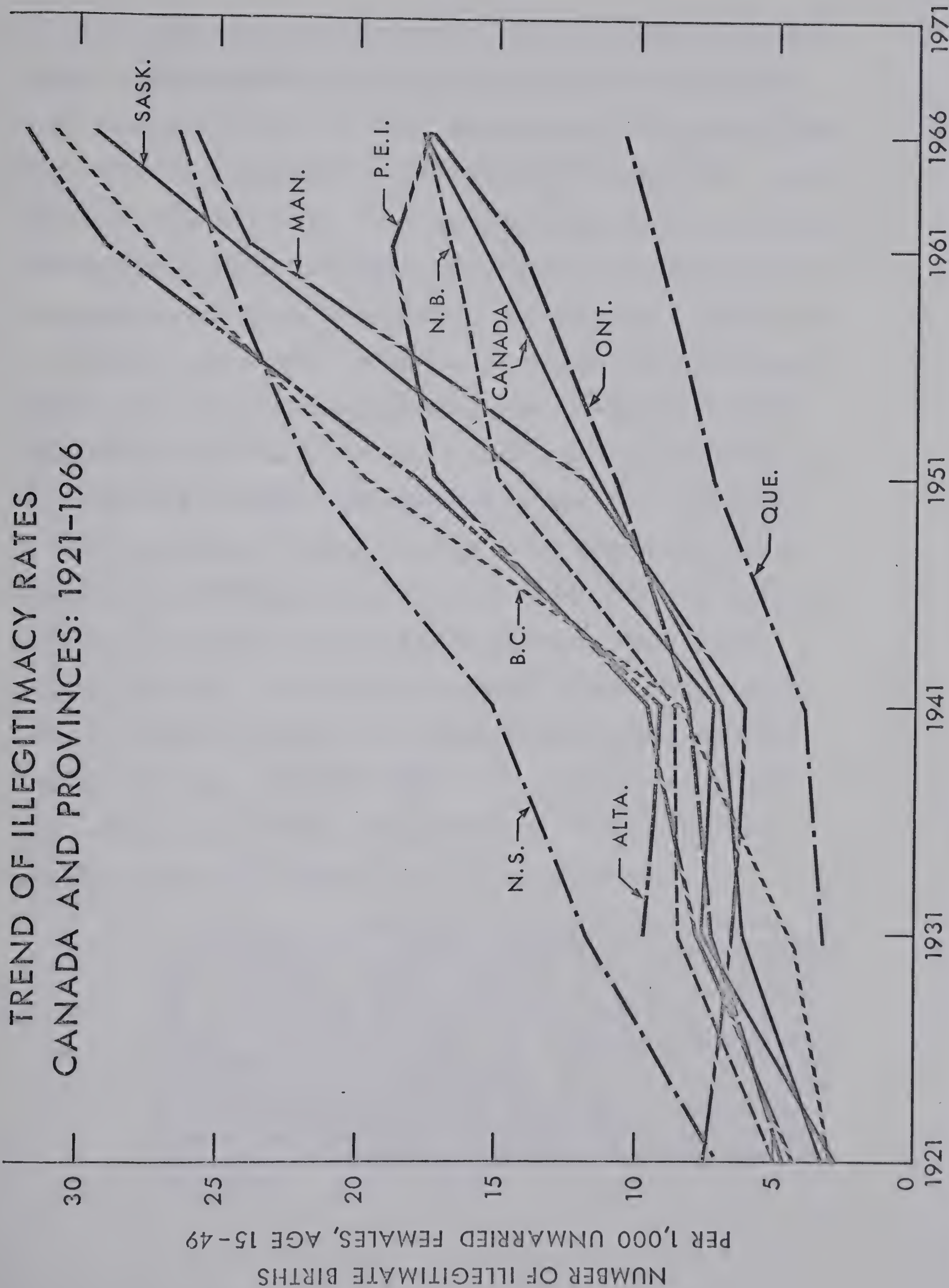
TREND OF ILLEGITIMACY RATES
CANADA AND PROVINCES
1921-1966

Area	Year					
	1921	1931	1941	1951	1961	1966
Canada Index*	3.3 100.0	6.2 187.9	7.0 212.1	11.5 348.5	15.5 469.7	17.9 542.4
British Columbia Index*	3.0 100.0	4.3 143.3	8.4 280.0	19.9 633.3	27.5 916.7	30.8 1,026.7
Alberta Index*	----- -----	9.7 100.0	9.2 94.8	18.0 185.6	29.2 301.0	31.9 328.9
Saskatchewan Index*	2.8 100.0	7.6 271.4	7.2 257.1	14.1 503.6	24.5 875.0	29.5 1,053.6
Manitoba Index*	7.5 100.0	6.5 86.7	6.1 81.3	11.9 158.7	23.8 317.3	25.8 344.0
Ontario Index*	4.7 100.0	7.4 157.4	8.3 176.6	10.8 229.8	14.2 302.1	17.4 370.2
Quebec Index*	----- -----	3.3 100.0	4.0 121.2	7.3 221.2	9.3 281.8	10.5 318.2
New Brunswick Index*	5.0 100.0	8.5 170.0	8.6 172.0	15.0 300.0	16.7 334.0	17.7 354.0
Prince Edward Is. Index*	4.3 100.0	7.8 181.4	9.6 223.2	17.3 402.3	18.8 437.2	17.5 407.0
Nova Scotia Index*	7.0 100.0	11.8 168.6	15.2 217.1	21.7 310.0	25.2 360.0	26.5 378.6

*Base year=1921; except for Alberta and Quebec=1931.

Source: Calculated. See Appendix A for sources of base data.

FIGURE 3:2



and ratios, were less pronounced in 1921 and 1931. However, the fluctuations increased markedly over time, with wider variations for more recent years such as 1961 and 1966. Looking at the illegitimacy rates (Table 3.3), an interesting clustering occurs in 1961 and 1966. Higher rates were found for British Columbia, Alberta, Saskatchewan, Manitoba, and Nova Scotia, while lower rates were exhibited by Ontario, Quebec, New Brunswick, and Prince Edward Island. However, such a grouping is not maintained historically, since British Columbia and Saskatchewan exhibit lower rates, relatively speaking, for 1921-1941. It would appear that years close to 1951 mark a turning point in the evolution of illegitimacy patterns of the provinces to what they presently are. In 1966, the provinces (ranked from high to low illegitimacy rates) displayed the following pattern: Alberta, British Columbia, Saskatchewan, Nova Scotia, Manitoba, New Brunswick, Prince Edward Island, Ontario, and Quebec. With the sole exception of Nova Scotia, the pattern of illegitimacy almost clearly differentiates itself along the East-West continuum. Henripin (1968) reveals the same general tendency, even though he analyzed fewer provinces. However, Henripin stresses the need for caution in such an interpretation:

. . . The way in which the provinces regroup themselves is a little surprising. Three provinces are clearly separated from the others, without one always being able to discern the relationships between them. If it is not too surprising to find Quebec and New Brunswick with lower rates, it is more difficult to explain the situation of Ontario between these latter two provinces. No doubt the particular definition of illegitimate births in this province results in an under-estimation of the rates; but it would be surprising that this factor alone would explain the reduced proportion of illegitimate fertility (Henripin, 1968:335, translation).

With the general trends explicated, a more careful examination of various underlying factors can now be conducted.

3.2 Substantive Analysis of Select Demographic Components: Canada.

The following sub-sections examine the relationship among three demographic components for Canada.

1921-1931 (Columns 2, 3 and 4 in Tables 3.4A and 3.4B).

During this decade, no substantial change occurred in the overall probability of being single in the childbearing ages, or the overall proportion single in the childbearing ages ($\sum f_x q_x$). However, both the overall probability of giving birth to an illegitimate child by a female in the childbearing ages in a population with a given age and marital distribution, or the general rate of illegitimacy ($\sum f_x q_x i_x$), and the overall probability of giving birth to a legitimate child by a female in the childbearing ages in the population with a given age and marital distribution, or the general rate of legitimacy $[\sum f_x (1-q_x) j_x]$, increased. This suggests the likelihood of an increase in the age-specific illegitimacy rates (i_x 's) and in the age-specific legitimacy rates (j_x 's). Therefore, it was necessary to standardize for values of the age-specific illegitimate and legitimate rates in 1921 (Column 4). The standardized values of the illegitimacy ratios and rates approximate the 1921 values; consequently, the observed changes in illegitimacy between 1921 and 1931 were partly due to changes in the age-specific legitimate and illegitimate rates.

TABLE 3.4A

ANALYSIS OF THE TREND OF ILLEGITIMACY
CANADA, 1921-1966

Item	1921	1931	1931*	1941	1941*	1951	1951*	1961	1961*	1966	1966*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
					(i_x, j_x 1931)		(i_x, j_x q_x 1941)		(i_x, j_x q_x 1951)		(i_x, j_x 1961)
Overall proportion single in child- bearing ages. ^a	.4115	.4371	.4371	.4427	.4427	.3389	.4111	.3082	.3435	.3314	.3314
General rate of illegitimacy. ^b	.0013	.0027	.0015	.0031	.0027	.0039	.0029	.0048	.0037	.0059	.0053
General rate of legitimacy. ^c	.0687	.0901	.0620	.0829	.0925	.1022	.0844	.1039	.0951	.0735	.1002

In Tables 3.4A and 3.4B through 3.13A and 3.13B, the values in a column with an asterisk should be compared with those in the column in the previous year mentioned, for example: 1931 and 1921, 1941* and 1931.

^aSymbolized as $\sum f_x q_x$ throughout Tables 3.4A and 3.4B to 3.13A and 3.13B.

^bSymbolized as $\sum f_x q_x i_x$ throughout Tables 3.4A and 3.4B to 3.13A and 3.13B, more fully described as the overall probability of giving birth to an illegitimate child by a female (any female) in the childbearing ages in a population with a given age and marital distribution.

^cSymbolized as $\sum f_x (1 - q_x) j_x$ throughout Tables 3.4A and 3.4B to 3.13A and 3.13B, more fully described as the overall probability of giving birth to a legitimate child by a female (any female) in the childbearing ages in a population with a given age and marital distribution.

Source: See Appendix A for method of calculation and data sources.

TABLE 3.4B

ANALYSIS OF THE TREND OF ILLEGITIMACY
CANADA, 1921-1966

Item	1921	1931	1931* (ix,jx ⁼ 1921)	1941	1941* (ix,jx ⁼ 1931)	1951	1951* (ix,jx, qx ⁼ 1941)	1961	1961* (ix,jx, qx ⁼ 1951)	1966	1966* (ix,jx ⁼ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Illegitimacy ratio. ^a	19.4	29.4	23.0	36.2	28.6	36.6	33.1	44.0	37.9	74.8	49.8
Illegitimacy rate. ^b	3.3	6.2	3.3	7.0	6.2	11.5	7.0	15.5	10.9	17.9	15.8

In Tables 3.4A and 3.4B through 3.13A and 3.13B, the values in a column with an asterisk should be compared with those in the column in the previous year mentioned, for example: 1931 and 1921, 1941* and 1931.

^aThe illegitimacy ratio is defined as the number of illegitimate births per 1,000 total births.

^bThe illegitimacy rate is defined as the number of illegitimate births per 1,000 unmarried women between 15 and 49 years of age.

Source: See Appendix A for method of calculation and data sources.

1931-1941 (Columns 3, 5 and 6 in Tables 3.4A and 3.4B).

Although there was no substantial change in the overall proportion single in the childbearing ages, the value of the general rate of illegitimacy increased, while the value of the general rate of legitimacy decreased. Standardizing for the age-specific illegitimate and legitimate rates in 1931, the illegitimacy ratio and rate approached the 1931 levels (comparing Columns 3 and 6). The implication is that changes in the age-specific illegitimate and legitimate rates were primarily responsible for the observed changes in the levels of illegitimacy.

1941-1951 (Columns 5, 7 and 8 in Tables 3.4A and 3.4B).

What can be said about these figures? Obviously, the value of the overall proportion single in the childbearing ages was reduced between 1941 and 1951. Probably, this fact would account for a substantial portion of the observed increase in the general rate of legitimacy. Since the general rate of illegitimacy changed only slightly, it would generally be ignored. However, several standardizations were conducted using many combinations of the factors before any conclusions were drawn. With a noticeable reduction in the proportion of total unmarried females at age "x" (q_x), this became the first factor for standardization. Surprisingly, the standardized values of the illegitimacy ratio and rate did not approximate the 1941 values all that closely. After several attempts, the combination of three factors (q_x , i_x and j_x) approximated the 1941 values most closely. One interesting feature worthy of mention is the drastic increase (from 7.0 to 11.5) in the illegitimacy rate, but the comparatively slight

increase (from 36.2 to 36.6) in the illegitimacy ratio. Probably, the changes in the values of the age-specific illegitimacy rates (i_x) and the age-specific legitimacy rates (j_x) tended to counterbalance their net effect on the value of the quotient $\frac{[\sum f_x(1-q_x)j_x]}{[\sum f_xq_xi_x]}$, and consequently on the ratio (Kumar, 1969:102).

1951-1961 (Columns 7, 9 and 10 in Tables 3.4A and 3.4B).

The value of the overall proportion single in the childbearing ages decreased slightly over the period; however, standardizing on the proportion of total unmarried females at age "x" was not sufficient by itself.³ In addition, there were increases in both the general rate of illegitimacy and legitimacy. Standardizations demonstrated that all three factors (q_x , i_x and j_x) contributed toward the overall changes in illegitimacy (Column 10).

1961-1966 (Columns 9, 11 and 12 in Tables 3.4A and 3.4B).

Comparing the three sums, there was an insignificant increase in the overall proportion single in the childbearing ages, an increase in the general rate of illegitimacy, and a decrease in the general rates of legitimacy. Consequently, standardization was conducted for 1966 with respect to both the age-specific illegitimate and legitimate

³It is important to realize that the proportion, at age "x," of all females in the childbearing period, i.e., from 15-49 years (f_x), as well as the proportion of total females at age "x" who are unmarried (q_x) could be an operating factor. However, Kumar (1969:102) points out that no gain in the insight of underlying changes would occur if both f_x and q_x were selected for standardization. Furthermore, a change in the level of f_x does not alter the illegitimacy level so appreciably as the other factors. However, q_x is an important factor and should always be selected for the first factor of standardization whenever the overall proportion single in the childbearing ages changes markedly.

rates for 1961. The resemblance between 1961 and 1966 (Columns 9 and 12) is considerably closer after standardization. By implication, changes in the age-specific illegitimate and legitimate fertility rates played a significant part in the observed changes between 1961 and 1966.

3.3 Substantive Analysis of Select Demographic Components: British Columbia (B.C.).

The following sub-sections examine the relationship among three demographic components for British Columbia.

1921-1931 (Columns 2, 3 and 4 in Table 3.5A and 3.5B).

Accompanying an insignificant change in the overall proportion single in the childbearing ages, there was an increase in the general rate of illegitimacy and a substantial decrease in the general rate of legitimacy. Standardizing for both the age-specific illegitimate and legitimate fertility rates in 1921, it seems that changes in these two factors were involved in the observed changes.

1931-1941 (Columns 3, 5 and 6 in Tables 3.5A and 3.5B).

Although the overall proportion single in the childbearing ages did not alter appreciably, both the general rates of illegitimacy and legitimacy increased. Standardizing for the age-specific illegitimate and legitimate fertility rates confirmed the suspicion that these two factors were involved.

1941-1951 (Columns 5, 7 and 8 in Tables 3.5A and 3.5B).

The important changes included a marked decrease in the overall

TABLE 3.5A

ANALYSIS OF THE TREND OF ILLEGITIMACY
BRITISH COLUMBIA, 1921-1966

Item	1921	1931	1931* ($i_x, j_x =$ 1921)	1941	1941* ($i_x, j_x =$ 1931)	1951	1951* ($q_x, i_x =$ 1941)	1961	1961* ($i_x =$ 1951)	1966	1966* ($i_x, j_x =$ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Overall proportion single in the child- bearing ages.	.3370	.3908	.3908	.3968	.3968	.2870	.3556	.2604	.2604	.2951	.2951
General rate of illegitimacy.	.0010	.0017	.0012	.0033	.0018	.0057	.0030	.0072	.0048	.0091	.0081
General rate of legitimacy.	.0830	.0598	.0721	.0699	.0675	.0931	.0790	.0968	.0968	.0668	.0969

Source: Calculated. See Appendix A for method.

Data used to calculate the proportion at age "x" of all females in the childbearing period, 15-49 years (f_x) and the proportion of total unmarried females at age "x" (q_x) in Tables 3.5A and 3.5B through 3.13A and 3.13B was obtained from: D.B.S., 1925a, Table 29, pp. 140-163; D.B.S., 1935a, Table 12, pp. 94-99; D.B.S., 1946, Table 7, pp. 94-119; D.B.S., 1953, Table 2, pp. 2-1--2.12; D.B.S., 1962, Table 20, pp. 20-1--20-10; D.B.S., 1963b, Table 78, pp. 78-1--78-22; D.B.S., 1968a, Table 34, pp. 34-1--34-26.

Additional base data (numbers of legitimate and illegitimate births) obtained from: D.B.S., 1923, Table 4, pp. 42-43; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 74-75; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 86-87; D.B.S., 1954a, Table 33, pp. 120-121; Province of British Columbia, 1962, Table 8, p. H67; Province of British Columbia, 1968, Table 46, p. AA69.

TABLE 3.5B

ANALYSIS OF THE TREND OF ILLEGITIMACY
BRITISH COLUMBIA, 1921-1966

Item	1921	1931	1931* (i_x, j_x [■] 1921)	1941	1941* (i_x, j_x [■] 1931)	1951	1951* (q_x, i_x [■] 1941)	1961	1961* (i_x [■] 1951)	1966	1966* (i_x, j_x [■] 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Illegitimacy ratio.	11.8	27.4	16.1	45.5	25.5	57.8	36.6	70.0	46.8	119.7	77.2
Illegitimacy rate.	3.0	4.3	3.0	8.4	4.5	19.9	8.4	27.5	18.3	30.8	27.5

Source: Calculated. See Appendix A for method.

Data used to calculate the proportion at age "x" of all females in the childbearing period, 15-49 years (f_x) and the proportion of total unmarried females at age "x" (q_x) in Tables 3.5A and 3.5B through 3.13A and 3.13B was obtained from: D.B.S., 1925a, Table 29, pp. 140-163; D.B.S., 1935a, Table 12, pp. 94-99; D.B.S., 1946, Table 7, pp. 94-119; D.B.S., 1953, Table 2, pp. 2-1--2-12; D.B.S., 1962, Table 20, pp. 20-1--20-10; D.B.S., 1963b, Table 78, pp. 78-1--78-22; D.B.S., 1968a, Table 34, pp. 34-1--34-26.

Additional base data (numbers of legitimate and illegitimate births) obtained from: D.B.S., 1923, Table 4, pp. 42-43; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 74-75; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 86-87; D.B.S., 1954a, Table 33, pp. 120-121; Province of British Columbia, 1962, Table 8, p. H67; Province of British Columbia, 1968, Table 46, p. AA69.

proportion single in the childbearing ages, accompanied by an increase in the general rate of illegitimacy. This is an excellent example to illustrate to "dual" effect of a change in the proportion of total unmarried females at age "x" (q_x) on the illegitimacy ratio (Kumar, 1969:102). By standardizing the 1951 illegitimacy indices with respect to q_x and the age-specific illegitimate fertility rate (i_x) for 1941, the resulting indices of 36.6 and 8.4 (Column 8) are reasonably close to 45.5 and 8.4 (Column 5). Thus, the decline in the level of q_x , meaning that the proportion married has increased, was responsible for the decline in the ratio but had absolutely no effect on the illegitimacy rate between 1941-51.

But how is this possible? A decline in the level of q_x implies a rise in the level of $1-q_x$. These appear in the numerator and denominator of the quotient $\frac{[\sum f_x(1-q_x)j_x]}{[\sum f_xq_xi_x]}$. As a result, both acted in the same direction--towards increasing the value of the quotient--consequently, the "dual" effect on q_x . In turn, the value of the illegitimacy ratio is decreased.

1951-1961 (Columns 7, 9 and 10 in Tables 3.5A and 3.5B).

Apart from the increase in the general rate of illegitimacy, there was no appreciable change along the other factors. Standardizing for the age-specific illegitimate fertility rate in 1951, the results suggest that changes in the age-specific illegitimacy rate played an important part in the observed changes.

1961-1966 (Columns 9, 11 and 12 in Tables 3.5A and 3.5B).

With reasonable certainty, one can conclude that the slight increase in the overall proportion single in the childbearing ages between 1961 and

1966 was of negligible importance. Such cannot be concluded about the increase in the general rate of illegitimacy, and the decrease in the general rate of legitimacy. Standardizations confirmed the importance of changes in the age-specific illegitimate and legitimate fertility rates.

3.4 Substantive Analysis of Select Demographic Components: Alberta.

The following sub-sections examine the relationship among three demographic components for Alberta.

1931-1941 (Columns 2, 3 and 4 in Tables 3.6A and 3.6B).

With little change in the overall proportion single in the childbearing ages, and in the general rate of illegitimacy, the decrease in the general rate of legitimacy becomes suspect. Standardizing for the age-specific legitimate fertility rate in 1931, it is apparent that changes in the age-specific legitimacy rates were associated with the observed changes.

1941-1951 (Columns 3, 5 and 6 in Tables 3.6A and 3.6B).

While the overall proportion single in the childbearing ages changed little, both the general rates of illegitimacy and legitimacy increased. Both the age-specific illegitimate and legitimate fertility rates were found to be significant factors (Column 6).

1951-1961 (Columns 5, 7 and 8 in Tables 3.6A and 3.6B).

The value of the overall proportion single in the childbearing ages decreased over the ten-year interval, while the general rates of

TABLE 3.6A

ANALYSIS OF THE TREND OF ILLEGITIMACY
ALBERTA, 1931-1966

Item	1931	1941	1941* (j _x ⁼ 1931)	1951	1951* (i _x , j _x ⁼ 1941)	1961	1961* (q _x , i _x , j _x =1951)	1966	1966* (i _x , j _x ⁼ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Overall proportion single in the childbearing ages.	.3689	.3912	.3912	.3057	.3057	.2696	.3028	.2951	.2951
General rate of illegitimacy.	.0036	.0036	.0036	.0055	.0028	.0079	.0052	.0094	.0088
General rate of legitimacy.	.0954	.0844	.0951	.1122	.0976	.1198	.1059	.0811	.1122

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1933, Table 26, pp. 72-73; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 84-85; D.B.S., 1954a, Table 33, pp. 118-119; Province of Alberta, 1961, Table 36, p. 106; Province of Alberta, 1968, Table 31, p. 160.

TABLE 3.6B

ANALYSIS OF THE TREND OF ILLEGITIMACY
ALBERTA, 1931-1966

Item	1931	1941	1941* (j _x = 1931)	1951	1951* (i _x ,j _x = 1941)	1961	1961* (q _x ,i _x , j _x =1951)	1966	1966* (i _x ,j _x = 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Illegitimacy ratio.	36.3	41.0	36.5	46.7	27.4	61.6	47.2	103.8	72.7
Illegitimacy rate.	9.7	9.2	9.2	18.0	9.0	29.2	17.3	31.9	29.8

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1933, Table 26, pp. 72-73; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 84-85; D.B.S., 1954a, Table 33, pp. 118-119; Province of Alberta, 1961, Table 36, p. 106; Province of Alberta, 1968, Table 31, p. 160.

illegitimacy and legitimacy increased. The combination of standardized factors which best approximated the 1951 values included all three factors-- q_x , i_x and j_x .

1961-1966 (Columns 7, 9 and 10 in Tables 3.6A and 3.6B).

The overall proportion single in the childbearing ages increased; however, standardizing for the proportion of total unmarried females at age "x" (q_x) did not provide any useful insights. Although the general rate of illegitimacy increased, the general rate of legitimacy decreased markedly. Nevertheless, standardizations revealed that the age-specific illegitimate and legitimate fertility rates to be the important pair of factors.

3.5 Substantive Analysis of Select Demographic Components:

Saskatchewan.

The following sub-sections examine the relationship among three demographic components for Saskatchewan.

1921-1931 (Columns 2, 3 and 4 in Tables 3.7A and 3.7B).

An increase in the general rate of illegitimacy coupled with a decrease in the general rate of legitimacy accounted for the observed changes. That is, the age-specific illegitimate and legitimate fertility rates were the contributing components.

1931-1941 (Columns 3, 5 and 6 in Tables 3.7A and 3.7B).

Although the overall proportion single in the childbearing ages and the general rate of illegitimacy showed increases, standardizations exposed the decrease in the general rate of legitimacy as the most prominent

TABLE 3.7A

ANALYSIS OF THE TREND OF ILLEGITIMACY
SASKATCHEWAN, 1921-1966

Item	1921	1931	1931* (i _x ,j _x ⁼ 1921)	1941	1941* (j _x ⁼ 1931)	1951	1951* (q _x ,i _x ⁼ 1941)	1961	1961* (i _x ,j _x ⁼ q _x =1951)	1966	1966* (i _x ,j _x ⁼ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Overall proportion single in the child- bearing ages.	.3058	.3882	.3882	.4211	.4211	.3441	.3721	.2854	.3389	.3124	.3124
General rate of illegitimacy.	.0008	.0029	.0010	.0030	.0030	.0049	.0027	.0070	.0045	.0092	.0073
General rate of iegitimacy,	.1337	.0966	.1084	.0821	.0926	.1051	.0945	.1122	.0960	.0827	.1091

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 40-41; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 70-71; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 82-83; D.B.S., 1954a, Table 33, pp. 116-117; Province of Saskatchewan, 1962, Table VI, p. 20; Province of Saskatchewan, 1968, Table V, p. 18.

TABLE 3.7B

ANALYSIS OF THE TREND OF ILLEGITIMACY
SASKATCHEWAN, 1921-1966

Item	1921	1931	1931*	1941	1941*	1951	1951*	1961	1961*	1966	1966*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
			(i _x ,j _x = 1921)		(j _x = 1931)		(q _x ,i _x = 1941)		(i _x ,j _x , q _x =1951)		(i _x ,j _x = 1961)
Illegitimacy ratio.	6.4	29.6	9.2	35.6	31.7	44.2	28.2	58.6	45.1	100.1	63.1
Illegitimacy rate.	2.8	7.6	2.6	7.2	7.2	14.1	7.4	24.5	13.4	29.5	23.5

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 40-41; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 70-71; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 82-83; D.B.S., 1954a, Table 33, pp. 116-117; Province of Saskatchewan, 1962, Table VI, p. 20; Province of Saskatchewan, 1968, Table V, p. 18.

factor. Then, changes in the age-specific legitimacy rates accounted for most of the observed change.

1941-1951 (Columns 5, 7 and 8 in Tables 3.7A and 3.7B).

Standardizations indicated that the decrease in the overall proportion single in the childbearing ages and the increases in the general rates of illegitimacy and legitimacy all contributed to the observed changes.

1951-1961 (Columns 7, 9 and 10 in Tables 3.7A and 3.7B).

Once again, all factors (q_x , i_x and j_x) were involved in the observed changes in the level of illegitimacy.

1961-1966 (Columns 9, 11 and 12 in Tables 3.7A and 3.7B).

Although the overall proportion single in the childbearing ages increased, standardization showed that the proportion of total unmarried females at age "x" (q_x) was not a significant contributor. Changes in the observed levels of illegitimacy were primarily the results of changes in the age-specific illegitimacy and legitimacy rates (i_x and j_x , respectively).

3.6 Substantive Analysis of Select Demographic Components:

Manitoba.

The following sub-sections examine the relationship among three demographic components for Manitoba.

1921-1931 (Columns 2, 3 and 4 in Tables 3.8A and 3.8B).

Although the overall proportion single in the childbearing ages increased substantially over the decade, the proportion of total unmarried

TABLE 3.8A

ANALYSIS OF THE TREND OF ILLEGITIMACY
MANITOBA, 1921-1966

Item	1921	1931	1931* ($i_x, j_x =$ 1921)	1941	1941* ($i_x, j_x =$ 1931)	1951	1951* ($i_x, j_x =$ $q_x = 1941$)	1961	1961* ($i_x, j_x =$ $q_x = 1951$)	1966	1966* ($i_x, j_x =$ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Overall proportion single in the child- bearing ages.	.3727	.4373	.4373	.4380	.4380	.3328	.3956	.2916	.3387	.3261	.3261
General rate of illegitimacy.	.0028	.0028	.0033	.0100	.0028	.0039	.0024	.0069	.0038	.0084	.0077
General rate of legitimacy.	.1221	.0778	.1001	.0746	.0823	.0991	.0755	.1043	.0895	.0742	.0993

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 38-39; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 68-69; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 80-81; D.B.S., 1954a, Table 33, pp. 114-115.

Data on numbers of illegitimate and legitimate births, Manitoba, 1961 and 1966, obtained directly from Dominion Bureau of Statistics in the form of working tables with references not indicated.

TABLE 3.8B

ANALYSIS OF THE TREND OF ILLEGITIMACY
MANITOBA, 1921-1966

Item	1921	1931	1931* (i _x ,j _x = 1921)	1941	1941* (i _x ,j _x = 1931)	1951	1951* (i _x ,j _x , q _x =1941)	1961	1961* (i _x ,j _x , q _x =1951)	1966	1966* (i _x ,j _x = 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Illegitimacy ratio.	22.4	35.3	32.2	34.4	33.3	38.3	31.0	62.4	40.9	101.7	72.0
Illegitimacy rate.	7.5	6.5	7.6	6.1	6.5	11.9	6.1	23.8	11.3	25.8	23.6

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 38-39; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 68-69; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 80-81; D.B.S., 1954a, Table 33, pp. 114-115.

Data on numbers of illegitimate and legitimate births, Manitoba, 1961 and 1966, obtained directly from Dominion Bureau of Statistics in the form of working tables with references not indicated.

females at age "x" was not revealed to be a significant factor through standardization. The age-specific illegitimate and legitimate fertility rates were found to be definite contributors.

1931-1941 (Columns 3, 5 and 6 in Tables 3.8A and 3.8B).

The very large increase in the general rate of illegitimacy, coupled with the decrease in the general rate of legitimacy resulted in standardization on the age-specific illegitimate and legitimate fertility rates for 1931. The observed changes were demonstrated to have been affiliated with changes in the age-specific illegitimacy and legitimacy rates.

1941-1951 (Columns 5, 7 and 8 in Tables 3.8A and 3.8B).

Associated with changes in the level of illegitimacy were all three components (q_x , i_x and j_x).

1951-1961 (Columns 7, 9 and 10 in Tables 3.8A and 3.8B).

Once again, all the factors were instrumental in accounting for the variations in illegitimacy.

1961-1966 (Columns 9, 11 and 12 in Tables 3.8A and 3.8B).

Although the overall proportion single in the childbearing ages increased, standardization suggested that the age-specific illegitimate and legitimate fertility rates were more prominent factors in accounting for the changes.

3.7 Substantive Analysis of Select Demographic Components:

Ontario.

The following sub-sections examine the relationship among three demographic components for Ontario.

1921-1931 (Columns 2, 3 and 4 in Tables 3.9A and 3.9B).

Again a familiar pattern appears: little or no change in the overall proportion single in the childbearing ages; an increase in the general rate of illegitimacy; and a decrease in the general rate of legitimacy. Column 4 provides the results of standardizing on the age-specific illegitimate and legitimate fertility rates for 1921. Changes occurred in both factors.

1931-1941 (Columns 3, 5 and 6 in Tables 3.9A and 3.9B).

Although the only seemingly significant change was the decrease in the general rate of legitimacy, the factor--age-specific legitimate fertility rate--alone did not account for a substantial amount of the change. Even though the general rate of illegitimacy changed only slightly, both the age-specific illegitimate and legitimate fertility rates together brought the values of the illegitimacy ratio and rate in Column 6 close to those of Column 3.

1941-1951 (Columns 5, 7 and 8 in Tables 3.9A and 3.9B).

Very noticeable was the large reduction in the overall proportion single in the childbearing ages. However, standardizing for the proportion of total unmarried females at age "x" for 1941 indicated that this was not the solitary contributor. Ultimately, the proportion of total unmarried females at age "x" combined with the age-specific illegitimate and legitimate rates to account for the observed changes over this period.

TABLE 3.9A

ANALYSIS OF THE TREND OF ILLEGITIMACY
ONTARIO, 1921-1966

Item	1921	1931	1931* (ix,jx= 1921)	1941	1941* (ix,jx= 1931)	1951	1951* (qx,ix, jx=1941)	1961	1961* (ix= 1951)	1966	1966* (ix,jx= 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Overall proportion single in the child- bearing ages.	.4178	.4195	.4195	.4087	.4087	.3044	.3822	.2612	.2612	.2940	.2940
General rate of illegitimacy.	.0019	.0031	.0020	.0034	.0030	.0033	.0032	.0037	.0028	.0051	.0044
General rate of legitimacy.	.0793	.0751	.0760	.0695	.0800	.0962	.0711	.1043	.1043	.0751	.0997

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 36-37; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 66-67; D.B.S., 1944a, Table 35, pp. 78-79; D.B.S., 1954a, Table 33, pp. 112-113; Province of Ontario, 1953, Table G, p. 18; Province of Ontario, 1968, Table 7, p. 70; Province of Ontario, 1970, Table G, p. 20.

TABLE 3.9B

ANALYSIS OF THE TREND OF ILLEGITIMACY
ONTARIO, 1921-1966

Item	1921	1931	1931* ($i_x, j_x =$ 1921)	1941	1941* ($i_x, j_x =$ 1931)	1951	1951* ($q_x, i_x,$ $j_x = 1941$)	1961	1961* ($i_x =$ 1951)	1966	1966* ($i_x, j_x =$ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Illegitimacy ratio.	24.0	39.9	25.3	46.5	35.8	33.0	43.1	34.2	26.0	63.9	41.9
Illegitimacy rate.	4.7	7.4	4.7	8.3	7.3	10.8	8.4	14.2	10.7	17.4	14.8

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 36-37; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 66-67; D.B.S., 1944a, Table 35, pp. 78-79; D.B.S., 1954a, Table 33, pp. 112-113; Province of Ontario, 1953, Table G, p. 18; Province of Ontario, 1968, Table 7, p. 70; Province of Ontario, 1970, Table G, p. 20.

1951-1961 (Columns 7, 9 and 10 in Tables 3.9A and 3.9B).

From the marked reduction of the overall proportion single in the childbearing ages between 1951 and 1961, one would have predicted that the proportion of total unmarried females at age "x" would have been an important determinant. On the contrary, none of the factors expected to account for the changes adequately pictured the changes. Quite surprisingly, the age-specific illegitimate fertility rate was the most prominent factor. Once more, the "dual" effect of a change in the proportion of total unmarried females at age "x" on the illegitimacy ratio is evident. The illegitimacy ratio is deceptive in this instance.

1961-1966 (Columns 9, 11 and 12 in Tables 3.9A and 3.9B).

The period 1961-66 marked the reappearance of a familiar pattern: similar values for the overall proportion single in the childbearing ages; an increase in the general rate of illegitimacy; and a decrease in the general rate of legitimacy. The observed changes mirror shifts in both the age-specific illegitimate and legitimate fertility rates.

3.8 Substantive Analysis of Select Demographic Components:

Quebec.

The following sub-sections examine the relationship among three demographic components for Quebec.

1931-1941 (Columns 2, 3 and 4 in Tables 3.10A and 3.10B).

With no substantial change in the overall proportion single in the childbearing ages, a slight decrease in the general rate of legitimacy,

TABLE 3.10A

ANALYSIS OF THE TREND OF ILLEGITIMACY
QUEBEC, 1931-1966

Item	1931	1941	1941* ($i_x, j_x =$ 1931)	1951	1951* ($i_x =$ 1941)	1961	1961* ($q_x, i_x,$ $j_x = 1951$)	1966	1966* ($i_x, j_x =$ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Overall proportion single in the child- bearing ages.	.4983	.5075	.5075	.4173	.4173	.3741	.4227	.3891	.3891
General rate of illegitimacy.	.0016	.0020	.0016	.0030	.0016	.0035	.0029	.0041	.0037
General rate of legitimacy.	.1125	.0990	.1110	.1135	.1135	.1051	.1069	.0728	.1023

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1933, Table 26, pp. 64-65; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 76-77; D.B.S., 1954a, Table 33, pp. 110-111.

Data on numbers of illegitimate and legitimate births, Quebec, 1961 and 1966, obtained directly from Dominion Bureau of Statistics in the form of working tables with references not indicated.

TABLE 3.10B

ANALYSIS OF THE TREND OF ILLEGITIMACY
QUEBEC, 1931-1966

Item	1931	1941	1941* ($i_x, j_x =$ 1931)	1951	1951* ($i_x =$ 1941)	1961	1961* ($q_x, i_x,$ $j_x = 1951$)	1966	1966* ($i_x, j_x =$ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Illegitimacy ratio.	14.5	20.3	14.5	26.0	14.1	32.2	26.5	53.3	34.8
Illegitimacy rate.	3.3	4.0	3.2	7.3	3.9	9.3	6.9	10.5	9.5

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1933, Table 26, pp. 64-65; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1942a, Table 35, pp. 76-77; D.B.S., 1954a, Table 33, pp. 110-111.

Data on numbers of illegitimate and legitimate births, Quebec, 1961 and 1966, obtained directly from Dominion Bureau of Statistics in the form of working tables with references not indicated.

and a slight increase in the general rate of illegitimacy, standardization (Column 4) revealed that changes in the age-specific illegitimate and legitimate fertility rates accounted for the observed changes.

1941-1951 (Columns 3, 5 and 6 in Tables 3.10A and 3.10B).

Confronted with a substantial decrease in the overall proportion single in the childbearing ages, a definite increase in the general rate of legitimacy, and a slight increase in the general rate of illegitimacy, one would suspect that the two most significant factors would be the proportion of total unmarried females at age "x" and the age-specific legitimate fertility rate. But standardization showed that the age-specific illegitimate fertility rate alone was the prime determinant.

1951-1961 (Columns 5, 7 and 8 in Tables 3.10A and 3.10B).

A substantial reduction in the overall proportion single in the childbearing ages, combined with a slight increase in the general rate of illegitimacy and a slight decrease in the general rate of legitimacy would tend to make one presuppose that the proportion of total unmarried females at age "x" (q_x) was the major element. However, it was demonstrated that q_x in conjunction with the age-specific illegitimate and legitimate fertility rates accounted for the observed changes.

1961-1966 (Columns 7, 9 and 10 in Tables 3.10A and 3.10B).

With little alteration in the overall proportion single in the childbearing ages, but moderate change in the general rates of illegitimate and legitimate fertility, standardization for the age-specific illegitimate and legitimate rates in 1961 (Column 10) confirmed that these

elements were involved in the observed change in illegitimacy.

3.9 Substantive Analysis of Select Demographic Components:

New Brunswick.

The following sub-sections examine the relationship among three demographic components for New Brunswick.

1921-1931 (Columns 2, 3 and 4 in Tables 3.11A and 3.11B).

A familiar pattern emerges: similar values for the overall proportion single in the childbearing ages; a slight increase in the general rate of illegitimacy; and a decrease in the general rate of legitimacy.

The prime determinants turn out to be the age-specific illegitimate and legitimate fertility rates.

1931-1941 (Columns 3, 5 and 6 in Tables 3.11A and 3.11B).

With similar overall proportions single in the childbearing ages and general rates of illegitimacy, the decrease in the general rate of legitimacy appears to be solely significant. Standardizing for the age-specific legitimate fertility rate in 1941 (Column 6) substantiates this notion.

1941-1951 (Columns 5, 7 and 8 in Tables 3.11A and 3.11B).

The values of the general rate of legitimacy remained approximately constant. However, there was a marked decrease in the proportion of total unmarried females at age "x" and an increase in the age-specific illegitimate fertility rate. Standardizations revealed that the decrease in the proportion of unmarried women plus the increase in the age-specific illegitimacy rates operated to produce the overall effect

TABLE 3.11A

ANALYSIS OF THE TREND OF ILLEGITIMACY
NEW BRUNSWICK, 1921-1966

Item	1921	1931	1931* ($i_x, j_x =$ 1921)	1941	1941* ($j_x =$ 1931)	1951	1951* ($q_x, i_x =$ 1941)	1961	1961* ($i_x =$ 1951)	1966	1966* ($i_x, j_x =$ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Overall proportion single in the child- bearing ages.	.4352	.4479	.4479	.4495	.4495	.3571	.4197	.3346	.3346	.3648	.3648
General rate of illegitimacy.	.0022	.0038	.0022	.0039	.0039	.0054	.0036	.0056	.0048	.0064	.0061
General rate of legitimacy.	.1203	.1108	.1123	.1070	.1161	.1296	.1115	.1232	.1232	.0872	.1186

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 34-35; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 62-63; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 74-75; D.B.S., 1954a, Table 33, pp. 108-109.

Data on numbers of illegitimate and legitimate births, New Brunswick, 1961 and 1966, obtained directly from Dominion Bureau of Statistics in the form of working tables with references not indicated.

TABLE 3.11B

ANALYSIS OF THE TREND OF ILLEGITIMACY
NEW BRUNSWICK, 1921-1966

Item	1921	1931	1931* ($i_x, j_x =$ 1921)	1941	1941* ($j_x =$ 1931)	1951	1951* ($q_x, i_x =$ 1941)	1961	1961* ($i_x =$ 1951)	1966	1966* ($i_x, j_x =$ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Illegitimacy ratio.	17.8	33.1	19.7	35.0	32.3	39.7	31.0	43.5	37.3	68.9	49.3
Illegitimacy rate.	5.0	8.5	5.0	8.6	8.6	15.0	8.5	16.7	14.3	17.7	16.8

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 34-35; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 62-63; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 74-75; D.B.S., 1954a, Table 33, pp. 108-109.

Data on numbers of illegitimate and legitimate births, New Brunswick, 1961 and 1966, obtained directly from Dominion Bureau of Statistics in the form of working tables with references not indicated.

an increase in observed illegitimacy.

1951-1961 (Columns 7, 9 and 10 in Tables 3.11A and 3.11B).

The only significant change was a decrease in the value of the general rate of illegitimacy between 1951 and 1961.

1961-1966 (Columns 9, 11 and 12 in Tables 3.11A and 3.11B).

With a discernible decrease in the general rate of illegitimacy, the suspect factor was the age-specific legitimate fertility rate. Standardization confirmed this suspicion.

3.10 Substantive Analysis of Select Demographic Components:

Prince Edward Island (P.E.I.).

The following sub-sections examine the relationship among three demographic components for Prince Edward Island.

1921-1931 (Columns 2, 3 and 4 in Tables 3.12A and 3.12B).

The overall proportion single in the childbearing ages remained about the same between 1921 and 1931. With the increase in the general rate of illegitimacy and the decrease in the general rate of legitimacy, the factors--age-specific illegitimate and legitimate fertility rates--would be the first to be scrutinized. Standardizations for these two factors in 1921 confirmed that significant changes occurred in both factors.

1931-1941 (Columns 3, 5 and 6 in Tables 3.12A and 3.12B).

Once again, the overall proportion single in the childbearing ages changed only slightly between 1931-41. There was an increase in the

TABLE 3.12A

ANALYSIS OF THE TREND OF ILLEGITIMACY
PRINCE EDWARD ISLAND, 1921-1966

Item	1921	1931	1931* (i_x, j_x 1921)	1941	1941* (i_x, j_x 1931)	1951	1951* (q_x, i_x $j_x=1941$)	1961	1961* (j_x 1951)	1966	1966* (j_x 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Overall proportion single in the child- bearing ages.	.4876	.4661	.4661	.4567	.4567	.3691	.4339	.3367	.3367	.3682	.3682
General rate of illegitimacy.	.0021	.0036	.0020	.0044	.0036	.0064	.0040	.0063	.0063	.0064	.0064
General rate of legitimacy.	.1018	.0936	.1057	.0904	.1012	.1176	.0913	.1281	.1183	.0917	.1239

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 30-31; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 58-59; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 70-71; D.B.S., 1954a, Table 33, pp. 104-105; Province of Prince Edward Island, 1961, Table IX, p. 167; Province of Prince Edward Island, 1966, Table VI, p. 173.

TABLE 3.12B

ANALYSIS OF THE TREND OF ILLEGITIMACY
PRINCE EDWARD ISLAND, 1921-1966

Item	1921	1931	1931* ($i_x, j_x =$ 1921)	1941	1941* ($i_x, j_x =$ 1931)	1951	1951* ($q_x, i_x,$ $j_x = 1941$)	1961	1961* ($j_x =$ 1951)	1966	1966* ($j_x =$ 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Illegitimacy ratio.	20.4	37.3	18.4	46.4	34.7	51.6	42.2	47.2	50.9	65.7	49.4
Illegitimacy rate.	4.3	7.8	4.2	9.6	7.9	17.3	9.3	18.8	18.8	17.5	17.5

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 30-31; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 58-59; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 70-71; D.B.S., 1954a, Table 33, pp. 104-105; Province of Prince Edward Island, 1961, Table IX, p. 167; Province of Prince Edward Island, 1966, Table VI, p. 173.

general rate of illegitimacy, and a decrease in the general rate of legitimacy. Standardizing for the age-specific illegitimate and legitimate fertility rates in 1931 confirmed the suspicion that the age-specific illegitimate and legitimate fertility rates were involved in the observed changes of the illegitimacy ratio and rate.

1941-1951 (Columns 5, 7 and 8 in Tables 3.12A and 3.12B).

With the substantial reduction in the value of the overall proportion single in the childbearing ages, it would appear that change in the proportion of unmarried females was the factor creating change. However, standardization on this factor alone was insufficient to bring the values of the illegitimacy ratios and rates (Columns 5 and 8) very close to one another. Subsequent standardizations confirmed that the age-specific illegitimate and legitimate fertility rates were also contributing elements, so that all three factors were involved in the observed changes.

1951-1961 (Columns 7, 9 and 10 in Tables 3.12A and 3.12B).

The only apparent change was in the increase in the general rate of legitimacy. Standardizing for the age-specific legitimate fertility rate in 1951 confirmed the suspicion that changes in this factor occurred.

1961-1966 (Columns 9, 11 and 12 in Tables 3.12A and 3.12B).

As between 1951-61, the only substantive change was in the age-specific legitimate fertility rate. The value of the general rate of legitimacy decreased over the five-year period. Standardization (Column 12) confirmed that changes in the age-specific legitimacy rate was involved

in the observed changes.

3.11 Substantive Analysis of Select Demographic Components:

Nova Scotia.

The following sub-sections examine the relationship among three demographic components for Nova Scotia.

1921-1931 (Columns 2, 3 and 4 in Tables 3.13A and 3.13B).

With no large change in the overall proportion single in the childbearing ages; an increase in the general rate of illegitimacy; and a decrease in the general rate of legitimacy, standardization on the age-specific illegitimate and legitimate fertility rates (Column 4) confirmed that observed changes were due to changes in these factors.

1931-1941 (Columns 3, 5 and 6 in Tables 3.13A and 3.13B).

As in 1921-31, the age-specific illegitimate and legitimate fertility rates were major contributors to the observed change.

1941-1951 (Columns 5, 7 and 8 in Tables 3.13A and 3.13B).

Changes were observed in all three factors: the overall proportion single in the childbearing ages decreased; the general rate of illegitimacy increased; and the general rate of legitimacy increased. Standardizations confirmed that all three factors were important contributors to the observed change.

1951-1961 (Columns 7, 9 and 10 in Tables 3.13A and 3.13B).

The decade 1951-61 remained consistent with the pattern established in 1941-51. Changes occurred in all three factors (q_x ; i_x and j_x).

TABLE 3.13A

ANALYSIS OF THE TREND OF ILLEGITIMACY
NOVA SCOTIA, 1921-1966

Item	1921	1931	1931* (i _x , j _x [≡] 1921)	1941	1941* (i _x , j _x [≡] 1931)	1951	1951* (q _x , i _x , j _x =1941)	1961	1961* (q _x , i _x , j _x =1951)	1966	1966* (i _x , j _x [≡] 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Overall proportion single in the child- bearing ages.	.4522	.4491	.4491	.4485	.4485	.3470	.4172	.3188	.3584	.3447	.3447
General rate of illegitimacy.	.0032	.0053	.0031	.0068	.0053	.0075	.0061	.0080	.0074	.0091	.0086
General rate of iegitimacy.	.1021	.0929	.0996	.0907	.1017	.1084	.0889	.1103	.0972	.0814	.1058

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 32-33; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 60-61; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 72-73; D.B.S., 1954a, Table 33, pp. 106-107; Province of Nova Scotia, 1963, Table III, pp. 42-43; Province of Nova Scotia, 1966, Table II, pp. 44-45.

TABLE 3.13B

ANALYSIS OF THE TREND OF ILLEGITIMACY
NOVA SCOTIA, 1921-1966

Item	1921	1931	1931* (ix,jx= 1921)	1941	1941* (ix,jx= 1931)	1951	1951* (qx,ix, jx=1941)	1961	1961* (qx,ix, jx=1951)	1966	1966* (ix,jx= 1961)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Illegitimacy ratio.	30.2	53.9	30.5	69.9	49.4	65.0	64.7	67.9	70.4	101.1	75.1
Illegitimacy rate.	7.0	11.8	7.0	15.2	11.8	21.7	14.7	25.2	20.5	26.5	24.9

Source: Calculated. See Appendix A for method.

Base data obtained from: D.B.S., 1923, Table 4, pp. 32-33; D.B.S., 1925b, Table 6, p. 153; D.B.S., 1933, Table 26, pp. 60-61; D.B.S., 1935b, Table 11, pp. 184-185; D.B.S., 1944a, Table 35, pp. 72-73; D.B.S., 1954a, Table 33, pp. 106-107; Province of Nova Scotia, 1963, Table III, pp. 42-43; Province of Nova Scotia, 1966, Table II, pp. 44-45.

1961-1966 (Columns 9, 11 and 12 in Tables 3.13A and 3.13B).

Although the overall proportion single in the childbearing ages changed slightly, standardizations for this factor alone, or in combination with the age-specific illegitimate and legitimate fertility rates was not informative. As in earlier decades, that is, 1921-31 and 1931-41, the general rate of illegitimacy and the general rate of legitimacy followed a parallel pattern with an increase and decrease, respectively. Standardizing for the age-specific illegitimate and legitimate fertility rates for 1961 supported the contention that changes in the age-specific illegitimate and legitimate fertility rates were important.

3.12 Similarities and Variations in the Selected Demographic Components for Canada and the Provinces.

The following sub-sections examine the relationship among three demographic components for Canada and the Provinces.

1921-1931. Over the ten-year period, Canadian illegitimacy showed an increase which was attributed primarily to changes in the age-specific illegitimate fertility rate and a decrease in the age-specific legitimate fertility rate. Regardless of the changes in the magnitude or direction of the age-specific groups, the overall change was reflected through these two factors. With the exception of Alberta and Quebec, for which data were not available for 1921, all the provinces demonstrated changes in both the aforementioned factors. Apart from Manitoba, all provinces showed an increase in the general rate of illegitimacy and a decrease in the general rate of legitimacy. In general, the change in Canadian illegitimacy reflected an overall increase in

the probability of giving birth to an illegitimate child by a female in the childbearing ages, given the age and marital distribution of the 1921-31 decade.

1931-1941. The period 1931-41 parallels the Canadian picture for 1921-31, with the age-specific illegitimate and legitimate fertility rates (i_x and j_x , respectively) appearing as the most significant factors. The values of the general rate of illegitimacy increased, while the general rate of legitimacy decreased. Several provinces revealed the same overall trend of the two factors (i_x and j_x) being the significant elements; however, the mechanisms by which these provinces (including B.C., Manitoba, Ontario, Quebec, P.E.I. and Nova Scotia) reached the 1941 values were quite varied. The most apparent difference from the 1921-31 pattern was that Alberta, Saskatchewan, and New Brunswick exhibited only the age-specific legitimate fertility rate as the more important factor of change. The age-specific illegitimate fertility rates did not contribute in any substantial manner; hence it was discounted from the analysis.

1941-1951. During this era, the changes in the proportion of total unmarried females at age "x" accounted for a substantial part of the observed changes in Canadian illegitimacy as a whole, and in seven of the nine provinces investigated. Standardization techniques suggested that the proportion of total unmarried females at age "x," the age-specific illegitimate fertility rate and the age-specific legitimate fertility rate combined to produce the observed changes. All three factors were found to be operative for Manitoba, Ontario,

P.E.I., Nova Scotia, and Canada as a whole. In British Columbia, Saskatchewan, and New Brunswick, the two factors operative were the proportion of unmarried females at age "x" and the age-specific illegitimate fertility rate. Contrary to expectations, Alberta and Quebec revealed no significant variation in the proportion of total unmarried females. In Alberta, the overall proportion single in the childbearing ages did not alter appreciably over this decade; consequently, the trend remained similar to 1921-41 period where the age-specific illegitimate and legitimate fertility rates were factors of change. Somewhat surprising was the "deviant" pattern exhibited by Quebec. There was a decrease in the overall proportion single in the childbearing ages, and an increase in the general rate of legitimacy in Quebec between 1941-51; and yet the most important change happened to be the slight increase in the general rate of illegitimacy. The age-specific illegitimate fertility rate became the primary contributing element.

1951-1961. Like 1941-51, all three factors--the proportion of total unmarried females, and the age-specific illegitimate and legitimate fertility rates--played a part in the observed changes in Canadian illegitimacy. As opposed to the 1941-51 picture, all three factors contributed to the change on a more equal basis. Although changes in the proportion of total unmarried females at age "x" continued to exert a major emphasis on the changes, this factor as a whole was less outstanding than in 1941-51. Five provinces (Alberta, Saskatchewan, Manitoba, Quebec, and Nova Scotia) disclosed patterns in which all three elements were important. But what was particularly obvious was that the

proportion of total unmarried females (q_x) played its part in accounting for the observed changes in Quebec and Alberta. Recall that q_x was not operative in these two provinces during 1941-51. Somehow q_x was "destined" to have an impact on all provinces at one time or another. Another interesting feature was that the q_x and i_x combination did not occur between 1951-61, whereas this combination was significant between 1941-51. Three provinces (B.C., Ontario, and New Brunswick) showed the age-specific illegitimate fertility rate (i_x) alone to be the significant demographic component. However, the route by which the overall proportion single in the childbearing ages, the general rate of illegitimacy, and the general rate of legitimacy changed, was quite varied. Prince Edward Island stood alone during this decade with the age-specific legitimate fertility rate being the solitary significant component. That is, neither the overall proportion single in the childbearing ages nor the general rate of illegitimacy showed marked variation for P.E.I. between 1951-61.

1961-1966. Change in the proportion of total unmarried females at age "x" ceased to be significant over the five-year span, 1961-66. The observed changes in Canadian illegitimacy at both the national and provincial levels (with P.E.I. the exception) regressed to the 1921-31 pattern where the age-specific illegitimate and legitimate fertility rates were the major contributors. In some instances the overall proportion single in the childbearing ages did change, but the change in the proportion of total unmarried females at age "x" was demonstrated to be insignificant relative to changes in the age-specific illegitimate and legitimate fertility rates. Prince Edward

Island adhered to the unique pattern that it established in 1951-61, with the age-specific legitimate fertility rate alone being the prime component.

3.13 Summary and Integrative Findings.

But what does all of this suggest with respect to current and historical patterns of Canadian illegitimacy? The analysis of Canadian illegitimacy suggests the inherent danger in simply describing trends from Tables 3.2 and 3.3. To reiterate, an in-depth analysis is a necessary prerequisite to the description of "genuine" patterns. Changes in Canadian illegitimacy between 1921-31 and 1931-41 reflected increases in the age-specific illegitimate fertility rate coupled with decreases in the age-specific legitimate fertility rate. The 1941-51 decade mirrored the significance of variations in the proportion of total unmarried females at age "x." This factor in combination with the age-specific illegitimate and legitimate fertility rates were the outstanding factors in the observed changes during this period. Between 1951 and 1961, the proportion of total unmarried females at age "x" remained an important element but much less so than during 1941-51. As in earlier periods, the age-specific illegitimate and legitimate fertility rates contributed in some manner. But probably the most noteworthy pattern emerges only after an investigation of the quinquennial period from 1961-1966. At this time, the proportion of total unmarried females at age "x" ceased being a significant component and a retrogressive pattern re-emerges--the age-specific illegitimate and legitimate fertility rates become the prime elements.

Moving from the national to provincial levels, a considerable degree of fluctuation and variation from and around the national patterns was observed. Some of the more interesting patterns were as follows:

- (1) Between 1931-41, most provinces demonstrated change in both the age-specific illegitimate and legitimate fertility rates. The three exceptions included Alberta, Saskatchewan, and New Brunswick, for which the age-specific legitimate fertility rate alone was the prime factor;
- (2) During 1941-51, the general tendency was for change in all three factors--the proportion of total unmarried females at age "x," the age-specific illegitimate fertility rate and the age-specific legitimate fertility rate. British Columbia, Saskatchewan, and New Brunswick departed from the pattern, revealing important changes in the proportion of total unmarried females at age "x" and in the age-specific illegitimate fertility rate. However, the most "radical" departure was exhibited by Alberta and Quebec for which the proportion of total unmarried females at age "x" did not intervene as an important element;
- (3) From 1951-61, the proportion of total unmarried females at age "x" declined in importance; but this factor was revealed to be significant in Alberta and Quebec. Prince Edward Island accepted the most "deviant" position with the age-specific legitimate fertility rate alone accounting for the primary changes;
- (4) and finally, the period 1961-66 emerged as a significant period with the 1921-41 pattern re-emerging. That is, the age-specific illegitimate and legitimate fertility rates became important and the factor, the proportion of total unmarried females at age "x," was eliminated from contention. Prince Edward Island stood alone, as it did between

1951 and 1961. Although the overall changes between 1961-66 were centered around variations in the age-specific illegitimate and legitimate fertility rates, wide fluctuations in the combination of changes in the overall proportion single in the childbearing ages, the general rate of illegitimacy, and the general rate of legitimacy which ultimately accounted for the changes in the age-specific illegitimate and legitimate fertility rates, were evident.

This discussion has centered on overall, or general, levels of variation in the factors f_x , q_x , i_x and j_x . Some question could be raised as to the contribution of particular five-year age groups of women. Often the argument is raised that young, unwed females are predominantly responsible for increased illegitimacy. Henripin (1968) has already dealt with this fallacious notion:

. . . It is beyond all question that illegitimate fertility has increased greatly since 1921 and especially since 1941. It has doubled or tripled for all the age groups between 1941 and 1961, except beyond 40 years. It is for the age groups 25-29 that the increase is the greatest: 339%. [. . .] Next, in decreasing order are the age groups 30-34, 35-39, 40-44, 20-24 and finally 15-19. . . (Henripin, 1968:333, cf. Table 11.7, 333, translation).

Obviously, increased illegitimacy cannot simply be explained as the "doing" of young, unwed females.

3.14 Some Comments on Ethnicity and Illegitimacy.

Statistics for illegitimate births according to ethnic origin of mother are available up to and including 1951. In 1952, the Dominion Bureau of Statistics (Ottawa) abandoned classifying illegitimate births according to this characteristic. Henripin (1968:335) has suggested several serious obstacles against the significance of this character-

istic with respect to cross-classification by illegitimacy; and furthermore, he has proposed that the ethnicity component be replaced by another characteristic such as maternal language. However, this investigation will briefly outline the illegitimacy-ethnicity relationship in order to guard against the accusation that all or most of the changes in illegitimacy were associated with one (or a few) ethnic groups and are therefore insufficient for the totality of the Canadian society. Nevertheless, this inquiry is well aware of the dubious nature of this relationship. The reader is advised to remain aware of the more marked limitations: (1) Henripin (1968:335-337) points out that there were very high proportions of unknowns in 1931, 1941, and 1951 (14.8, 5.4, and 3.2 percent, respectively); (2) It is not certain that women have declared their ethnic origins in the same way in the census as when they declared the birth of their child; (3) Data by age groups of mothers cross-classified by illegitimacy and ethnicity is not available; and (4) After 1951, no data relating ethnicity and illegitimacy is obtainable. Hence, no trends for 1951-61 and 1961-66 are available.

Given the limitations of such a discussion, Table 3.14 expresses the proportion of illegitimate births according to selected ethnic origins of mothers. No attempt was made to calculate illegitimacy rates for women in selected ethnic groups. From Table 3.14, one sees that for most ethnic groups (exceptions of French and Indian) no substantial changes in proportion contributed by a given ethnic group toward illegitimacy occurred in 1931-51. Since the variations tend to be more regional, Table 3.15 summarizes the direction (not the exact magnitude) of provincial variations in the contribution of selected ethnic groups toward illegitimacy.

TABLE 3.14

PROPORTION ILLEGITIMATE OF TOTAL ILLEGITIMATE LIVE BIRTHS
 ACCORDING TO SELECTED ETHNIC ORIGINS OF MOTHERS,
 CANADA AND PROVINCES, 1931, 1941 AND 1951a

Area and Year ^b	Ethnicity of Mother							Not Specified
	English	Irish	Scottish	French	German	Native Indian	Polish	Ukrainian
1931								
Canada	23.3	9.1	10.4	21.9	3.8	4.4	1.9	2.7
P.E.I.	28.2	14.1	33.8	21.1	0.0	0.0	0.0	0.0
Nova Scotia	46.7	9.7	20.3	12.5	2.1	0.5	0.0	0.0
New Br.	39.5	11.7	10.3	35.1	0.0	1.4	0.0	0.0
Quebec	4.1	1.9	1.0	43.9	0.2	0.4	0.4	46.8
Ontario	36.2	15.3	15.1	13.4	3.3	3.7	1.7	3.2
Manitoba	16.9	7.8	11.1	11.9	8.4	9.9	7.6	13.1
Sask.	18.0	8.8	9.7	7.8	14.4	7.5	4.7	9.6
Alberta	20.6	6.9	11.3	6.6	9.8	15.7	4.4	9.8
B.C.	34.4	10.8	16.7	3.5	3.1	16.3	1.0	1.4
1941								
Canada	23.0	10.4	9.8	29.4	3.0	6.4	1.5	2.8
P.E.I.	20.8	21.9	21.9	28.1	0.0	3.1	0.0	0.0
Nova Scotia	38.1	12.1	20.4	13.4	1.4	1.1	0.2	0.0
New Br.	36.6	12.7	11.3	34.2	0.2	1.4	0.0	0.0
Quebec	4.3	2.4	1.0	72.0	0.1	0.7	0.3	17.8
Ontario	33.6	15.9	12.6	16.3	3.0	4.7	1.8	2.3
Manitoba	19.5	8.1	9.9	11.8	5.4	17.2	4.6	11.8
Sask.	17.0	10.4	9.4	9.2	10.8	14.8	3.7	7.8
Alberta	17.2	10.0	10.3	6.8	8.9	16.8	3.0	10.8
B.C.	27.9	10.0	12.1	5.5	4.2	20.8	2.5	1.9

continued:

continued:

PROPORTION ILLEGITIMATE OF TOTAL ILLEGITIMATE LIVE BIRTHS
ACCORDING TO SELECTED ETHNIC ORIGINS OF MOTHERS,
CANADA AND PROVINCES, 1931, 1941 AND 1951^a

Area and Year ^b	Ethnicity of Mother							Not Specified
	English	Irish	Scottish	French	German	Native Indian	Polish	Ukrainian
1951								
Canada	20.6	9.6	9.5	28.8	3.8	11.3	1.3	2.7
P.E.I.	31.1	15.9	31.9	18.1	0.0	1.4	0.0	0.0
Nova Scotia	35.6	11.1	17.6	13.6	2.4	1.6	0.3	0.0
New Br.	32.2	13.7	10.9	35.0	0.6	2.3	0.2	0.0
Quebec	6.5	2.0	1.3	74.0	0.2	0.9	0.3	12.0
Ontario	32.4	16.8	12.6	14.3	3.9	7.3	1.5	0.3
Manitoba	17.2	8.2	10.1	16.7	4.7	22.6	3.4	0.4
Sask.	10.5	8.3	7.1	8.9	11.0	33.5	1.5	0.0
Alberta	15.6	7.2	10.5	5.3	9.7	28.1	2.7	0.0
B.C.	20.4	10.0	12.8	6.4	4.6	23.1	2.1	0.1

^aNote that row totals are not additive to 100% since other ethnic origins were omitted due to small numbers.

^bExcluding Newfoundland, North West Territories, and the Yukon, since data is not available.

Sources: Calculated. Data obtained from D.B.S, 1933, Table 27, pp. 76-89; D.B.S., 1944a, Table 36, pp. 88-101; D.B.S., 1954a, Table 34, pp. 122-139.

TABLE 3.15

DIRECTION OF CHANGE IN THE PROPORTION ILLEGITIMATE OF
TOTAL ILLEGITIMATE LIVE BIRTHS ACCORDING TO
SELECTED ETHNIC ORIGINS OF MOTHERS,
CANADA AND PROVINCES
1931-41 AND 1941-51a

Ethnic Origin ^b	Canada	P.E.I.	N.S.	New Br.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
English										
1931-41	-	-	-	-	(+)	-	+	(-)	-	-
1941-51	-	+	-	-	+	-	-	-	-	-
Irish										
1931-41	+	+	+	(+)	(+)	(+)	(+)	+	+	(-)
1941-51	(-)	-	(-)	(+)	(-)	(+)	(+)	-	-	N.C.
Scottish										
1931-41	(-)	-	(+)	(+)	N.C.	-	-	(-)	(-)	-
1941-51	(-)	+	-	(-)	(+)	N.C.	(+)	-	(+)	(+)
French										
1931-41	+	+	(+)	(-)	+	+	(-)	+	(+)	+
1941-51	(-)	-	(+)	(+)	+	-	+	(-)	-	(+)
German										
1931-41	(-)	N.C.	(-)	(+)	(-)	(-)	-	-	(-)	+
1941-51	(+)	N.C.	(+)	(+)	(+)	(+)	(-)	(+)	(+)	(+)
Native										
Indian										
1931-41	+	+	(+)	N.C.	(+)	(+)	+	+	+	+
1941-51	+	-	(+)	(+)	(+)	+	+	+	+	+
Polish										
1931-41	(-)	N.C.	(+)	N.C.	(-)	(+)	-	-	-	+
1941-51	(-)	N.C.	(+)	(+)	N.C.	(-)	-	-	(-)	(-)

continued:

continued:

DIRECTION OF CHANGE IN THE PROPORTION ILLEGITIMATE OF
TOTAL ILLEGITIMATE LIVE BIRTHS ACCORDING TO
SELECTED ETHNIC ORIGINS OF MOTHERS,
CANADA AND PROVINCES
1931-41 AND 1941-51^a

Ethnic Origin ^b	Canada	P.E.I.	N.S.	New Br.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
Ukranian										
1931-41	(+)	N.C.	N.C.	(+)	(+)	+	-	-	(+)	(+)
1941-51	(-)	N.C.	N.C.	(-)	(-)	(+)	-	-	-	+

^aDerived from Table 3.14.

Symbols:

+ = percentage point increase.

- = percentage point decrease.

() = slight increase or decrease, equal to or less than one percentage point change.

N.C. = no change, or no data.

^bAs in Table 3.14, not all ethnic groups used because of problems with small absolute numbers in cells.

In rather broad terms, it appears that the English ethnic group tended to decrease in its contribution to illegitimacy over the entire twenty-year span (1931-1951). The only important exceptions were Quebec and Prince Edward Island. Changes in the Irish group were generally negligible except for Prince Edward Island, Saskatchewan, and Alberta which showed an increase between 1931-41, and a decrease for 1941-51. Most changes in the Scottish ethnic group were negligible; however, to characterize the group, the overall tendency was toward a decline. The French ethnic group tended to demonstrate the most varied provincial changes. Quebec had increases over both ten-year intervals. In three provinces--Prince Edward Island, Ontario, and Saskatchewan--French ethnicity contributed increasingly between 1931-41, and then decreased between 1941-51. Manitoba illustrated a minor decrease from 1931-41; and a significant increase between 1941-51. Alberta recorded a slight increase over the 1931-41 interval, but a definite decrease between 1941-51. Finally, British Columbia showed increases over both ten-year intervals, with the latter interval recording only a minor change.

Overall, the German ethnic group tended to exhibit a slight decline between 1931-41, and a slight increase from 1941-51. For the most part, those of Polish and Ukrainian descent showed decreasing or negligible changes.

The outstanding changes occur to women of Indian origin. With the exception of Prince Edward Island, all provincial variations over the twenty-year span (1931-51) revealed increases for those of Indian ethnicity. But especially noteworthy is that for all Western provinces,

women of the Indian ethnic group showed marked increases (that is, over a one percentage point increase; see Table 3.15 notes). Two tentative possibilities immediately arise. First, Indian women are especially vulnerable to sexual "exploitation" ending in illegitimate childbearing. Second, Indian women are probably caught in a group which is increasingly subject to improved reporting. That is, Indian women tend to readily come into contact with the type of services and facilities supplied to the unwed female and/or mother. Consequently, the percentage of such women in the reporting statistics on illegitimacy tends to be more representative of the actual numbers. Women in other ethnic groups tend to be under-estimated in the reporting statistics. The result tends toward the selective bias that Indian women are extensively responsible for increases in illegitimate childbearing. This is not the case, and probably, Native Indian women contribute little more than women of other ethnic groups to the total increases in Canadian illegitimacy.

CHAPTER 4

CROSS-CULTURAL VARIATIONS IN ILLEGITIMACY:

PRINCIPLES AND FACTS

4.1 Quasi-universals: The Principle of Legitimacy.

The evolution of new disciplines within the social sciences forced the early pioneers to abandon the search for "universal" or "invariant" points of reference. Inquiries concentrated on the concrete and specific. Consequently, the search for absolute universals was replaced by the search for almost-universals, or quasi-universals. In part, the struggle to gain recognition made it difficult for the new disciplines to maintain a world-wide perspective:

. . . The very success of the new sciences discouraged cross-cultural and cross-national generalization. The disciplines gained in methodological precision but in this process lost sight of the original aim: the development of systematic knowledge of the world's societies through comparisons (Rokkan, 1966:4).

Nevertheless, one of the early messages from anthropology was recognition of the variability of human behavior. "Human nature" is very much the product of culture, and hence is subject to cross-cultural variability (Stephens, 1963:400). Being plastic, human nature may be molded by culture into a variety of psychic forms, shapes, and sizes. And yet, as malleable as human nature is, in many of its details it is surprisingly constant. One consistent tendency in human nature, or at least quasi-universal, is the notion that mothers are expected to be

married (Stephens, 1963:401). Building upon this quasi-universal, Malinowski conceived of the following generalization as a sociological law which was entitled the "principle of legitimacy":

. . . Among the conditions which define conception as a sociologically legitimate fact there is one of fundamental importance. The most important moral and legal rule concerning the physiological side of kinship is that no child should be brought into the world without a man--and one man at that--assuming the rôle of sociological father, that is, guardian and protector, the male link between the child and the rest of the community (Malinowski, 1962:63).

Malinowski allowed for variations in the form which the principle of legitimacy assumed. These variations depended on the laxity or stringency accorded prenuptial intercourse, the value set upon virginity or the contempt for it, the ideas held by the nations as to the mechanism of procreation, and above all, on whether the child is viewed as a burden or an asset (Malinowski, 1962:63). He believed that an understanding of the nature and importance of legitimacy would be gained by discussing two intertwined aspects of procreation--the biological and the cultural. Since sexual intercourse does not always result in conception, and since pregnancy can be terminated by abortion, the moral, customary and legal rules of most societies intercede. The result is the dissociation of the two aspects of procreation--sex and parenthood, or the biological and the cultural.

Generally, freedom of intercourse (though not universal) is quite prevalent in human societies. But freedom of conception outside marriage is seldom allowed, or at least under very exceptional circumstances. Although a child may be conceived out of wedlock, most societies have evolved mechanisms by which legitimation may take place. That is, liberty of parenthood is not equal to liberty of sexual

intercourse. Thus, from the principle of legitimacy follows a second important generalization, namely, that the relations of sexuality to parenthood must be studied with reference to the only relevant link-- marriage conceived as a contract legitimizing offspring (Malinowski, 1962:64-65). In sum, marriage cannot be defined as the licensing of sexual intercourse but rather as the licensing of parenthood.

4.2 World Variations in the Level of Illegitimacy.

The following sub-sections present a general overall view of world variations in illegitimacy.

Selection of Countries for Analysis. Adopting Hartley's (1970) suggestions for the indirect standardization of illegitimacy ratios, more than one-hundred countries were initially chosen for the analysis from the continents of Africa, North and South America, Asia, Europe, and Oceania. The first criteria for the selection of countries was the availability of sufficient data on births by legitimacy status.⁴ Data were chosen for select countries for a period, on or close to 1960, as most countries conducted a major census on or close to this date.⁵

⁴The first criteria of selection was the availability of data on legitimacy status in the United Nations Demographic Yearbook, 1965, Table 20.

⁵An examination of the availability of data from several editions of the United Nations Demographic Yearbook suggests that the broadest selection of countries providing the necessary data to calculate illegitimacy ratios should be chosen for the year 1960. However, this forces the investigator into the acceptance of a time-lag bias of roughly ten years. But, in order to minimize problems in data reliability from improved tabulation, editing, collection and coding over time, the period on or close to 1960 was designated as most suitable.

Two additional criteria were chosen to further limit the number of countries. First, each country was ranked and inserted into one of four possible categories as to the reliability of its census and vital registration data.⁶ Secondly, within each of the four categories, an averaged crude birth rate (CBR) for the years 1959, 1960 and 1961 was used to determine the extremes in fertility levels for each of the continents.⁷ This provided a method of selecting and achieving some sort of representation of the variations in the level of legitimate and illegitimate fertility between continents and countries within continents.

With this substantial limitation of the number of countries to be investigated, the next step was to secure data on the marital status of the female population by five-year age groups.⁸ Difficulty was encountered in the attempt to match the year for which data on legitimacy status and marital status were available. Previously, data by legitimacy status were chosen for 1960; therefore, countries with data on the marital status of females for 1960 were extracted first. Then, data close to 1960 (e.g., 1959, 1961) were supplemented. No data outside the range 1959-61 were used in order to minimize problems created by improved enumeration techniques over time. Eventually, about forty

⁶ Lee Jay Cho (1964) discusses the selection of countries according to reliability of census and vital registration statistics.

⁷ An averaged crude birth rate for a 3-year period was chosen to reduce the possibility of unusual fluctuations for a single year.

⁸ Statistics on the marital status of women in various countries were primarily found in the 1962, 1963, and 1968 editions of the United Nations Demographic Yearbook.

countries remained.

Indirect standardizations, as outlined by Shirley Hartley (1970), were calculated using Canadian legitimate and illegitimate fertility rates for 1961, and Jamaican rates for 1960. Objections might be raised as to why ratios were calculated when many countries process data suitable for calculating rates. No doubt the selection of countries with suitable data for rate calculations immediately biases cross-cultural investigations. Since less reliable data tend to originate from Asiatic, African and South American nations, researchers favor the selection of countries with highly reliable data which tends toward an over-selection from European and North American countries.

Comparative Analysis of World Variations in Illegitimacy.

Column 3 in Table 4.1 depicts the actual illegitimacy ratios for 36 select countries. Generally, Central and South American countries are found highest in the rank ordering.⁹ Asiatic countries tended to exhibit the lowest illegitimacy ratios, while European countries tended to cluster slightly above the Asiatic countries. The African countries studied were generally scattered throughout the ordering. One very apparent feature was that countries with high levels of illegitimacy were clearly separated from countries with low levels of illegitimacy. That is, high ranking countries tended to exhibit illegitimacy ratios of a magnitude exceeding 25.0, while low ranking countries tended to be 5.0 or less. An interesting speculation would be that the movement

⁹A country with a rank position of 1 exhibits the highest level of illegitimacy as measured by the illegitimacy ratio for the select countries investigated.

from high to low, or low to high levels of illegitimacy does not require stabilization at an intermediate level. Countries tend to exhibit illegitimacy at the extremes.

Having standardized the illegitimacy ratios of the 36 selected countries according to Canadian illegitimacy rates of 1961, the countries were rank ordered from highest to lowest, as before (Column 5 in Table 4.1). Parallel to the pattern in Column 3 of Table 4.1, some Central and South American countries tended toward the high levels of illegitimacy. However, the European countries moved to higher levels, relative to their position in Column 3 of Table 4.1. The African nations clustered at the lower levels of illegitimacy, while the Asian and remaining Central and South American countries were dispersed. Standardizing according to the Jamaican model did not alter the pattern appreciably (Column 7 in Table 4.1). The relative positions were changed only one or two positions from those in Column 5. Many positions did not change.

The method of data presentation in Table 4.2 permits one to observe the effect of both differential illegitimate and legitimate fertility rates--across the rows--and differential marital distributions for the countries--looking down the columns--at one glance. Across the rows, the percentage of all births which would have been illegitimate under different fertility conditions is given under the actual fertility conditions of the country in question and then under the fertility rates of the two model countries. For example, with the actual age and marital structure of the United States in 1960, about 5 percent of all births occurred out of wedlock. Under Canadian

TABLE 4.1

RANK ORDER OF THIRTY-SIX SELECT COUNTRIES ACCORDING
TO ACTUAL ILLEGITIMACY RATIOS ON OR NEAR 1960, AND
FOR STANDARDIZED RATIOS AS PER ILLEGITIMACY RATES
OF CANADA IN 1961 AND JAMAICA IN 1960

Rank Order	Actual Illegitimacy Ratio		Standardized ratios as per Canadian illegitimacy rates in 1961		Standardized ratios as per Jamaican illegitimacy rates in 1960	
	Country	Ratio	Country	Ratio	Country	Ratio
1	Jamaica	72.40	Jamaica	27.41	Jamaica	71.34
2	El Salvador	62.97	French Guiana	18.56	French Guiana	60.63
3	French Guiana	62.86	Guadeloupe	16.41	Guadeloupe	57.68
4	Dominican Rep.	62.59	Seychelles	15.04	Seychelles	54.92
5	Panama	60.56	Portugal	12.92	Portugal	49.74
6	Venezuela	54.55	Spain	9.23	Ryukyu Islands	41.04
7	Western Samoa	43.50	Ryukyu Islands	9.00	Spain	40.84
8	Guadeloupe	43.48	Switzerland	8.30	Switzerland	38.66
9	Peru	41.75	Greece	8.11	Japan	37.89
10	Seychelles	41.54	Japan	7.87	Greece	37.82
11	Angola	38.29	Finland	6.97	Finland	34.99
12	Puerto Rico	25.40	Sweden	6.68	Sweden	33.78
13	Mexico	25.03	West Germany	6.19	American Samoa	32.53
14	Sweden	11.28	American Samoa	5.91	El Salvador	32.09
15	Portugal	9.45	El Salvador	5.87	West Germany	31.91
16	American Samoa	8.50	Puerto Rico	5.60	Puerto Rico	31.46
17	West Germany	6.12	Norway	5.60	Philippines	31.09
18	Hungary	5.47	Peru	5.58	Peru	31.00
19	United States	5.26	Venezuela	5.54	Venezuela	30.84
20	New Zealand	5.25	Philippines	5.48	Norway	29.97
21	Central African Rep.	4.83	Panama	5.22	Panama	29.84

continued:

continued:

Rank Order	Actual Illegitimacy Ratio		Standardized ratios as per Canadian illegitimacy rates in 1961		Standardized ratios as per Jamaican illegitimacy rates in 1960	
	Country	Ratio	Country	Ratio	Country	Ratio
22	Czechoslovakia	4.80	Cyprus	5.05	Western Samoa	28.64
23	Poland	4.36	Western Samoa	4.88	Cyprus	28.61
24	Canada	4.26	Mexico	4.76	Mexico	28.59
25	Finland	4.04	Canada	4.37	Dominican Rep.	26.05
26	Switzerland	3.82	Dominican Rep.	4.27	Canada	25.43
27	Norway	3.67	Poland	4.17	New Zealand	23.91
28	Ryukyu Islands	3.57	New Zealand	4.08	Poland	23.89
29	Spain	2.33	Czechoslovakia	3.81	Czechoslovakia	23.06
30	Greece	1.23	United States	3.80	United States	22.82
31	Japan	1.22	Hungary	3.61	Israel	22.19
32	Maritius	0.83	Israel	3.56	Maritius	22.02
33	Philippines	0.70	Maritius	3.47	Hungary	21.91
34	Israel	0.28	United Arab Rep.	2.41	Central African Rep.	15.94
35	Cyprus	0.20	Angola	1.67	United Arab Rep.	15.77
36	United Arab Rep.	0.10	Central African Rep.	0.94	Angola	11.66

Source: Calculated. See Appendix B for method.

TABLE 4.2

ILLEGITIMACY RATIOS FOR THIRTY-SIX SELECTED COUNTRIES,
BY CONTINENT, STANDARDIZING ON AGE-SPECIFIC LEGITIMATE
AND ILLEGITIMATE FERTILITY RATES FOR TWO MODEL COUNTRIES

Area	Country	Index of Reliability of Data ^a	Average Crude Birth Rate (CBR) 1959-61	Year of Marital Status Data	Reported Illegit- macy Ratio	Standardized ratios as per the rates of: b	
						Canada 1961	Jamaica 1960
North America	Canada	I	26.7	1961	4.26	4.37	25.43
	United States	I	23.7	1960	5.26	3.80	22.82
	Mexico	I	46.2	1960	25.03	4.76	28.59
Central America	Jamaica	II	40.7	1960	72.40	27.41	71.34
	El Salvador	I	49.1	1961	62.97	5.87	32.09
	French Guiana	II	32.3	1961	62.86	18.56	60.63
	Dominican Rep.	III	48-50.0	1960	62.59	4.27	26.05
	Panama	I	40.6	1960	60.56	5.22	29.84
	Puerto Rico	I	32.0	1960	25.40	5.60	31.46
	Guadeloupe	III	37.0	1961	43.48	16.41	57.68
South America	Venezuela	II	47-50.0	1961	54.55	5.54	30.84
	Peru	II	43-45.0	1961	41.75	5.58	31.00
Europe	Sweden	I	13.9	1960	11.28	6.68	33.78
	Portugal	I	24.3	1960	9.45	12.92	49.74
	West Germany	I	17.9	1961	6.12	6.19	31.91
	Hungary	I	14.6	1960	5.47	3.61	21.91
	Czechoslovakia	I	15.9	1961	4.80	3.81	23.06
	Poland	I	22.6	1960	4.36	4.17	23.89
	Finland	I	18.6	1960	4.04	6.97	34.99
	Switzerland	I	17.8	1960	3.82	8.30	38.66
	Norway	I	17.4	1960	3.67	5.60	29.97
	Spain	I	21.6	1960	2.33	9.23	40.84
	Greece	II	18.7	1961	1.23	8.11	37.82

continued:

continued:

Area	Country	Index of Reliability of Data ^a	Average Crude Birth Rate (CBR) 1951-61	Year of Marital Status Data	Reported Illegit- macy Ratio	Standardized Ratios as per the rates of: ^b	
						Canada 1961	Jamaica 1960
Africa	Seyshelles	II	40.6	1960	41.54	15.04	54.92
	Angola	II	20.4	1960	38.29	1.67	11.66
	Central African Rep.	II	48.0	1959-60	4.83	0.94	15.94
	Maritius	I	38.8	1962	0.83	3.47	22.02
	United Arab Rep.	II	43.3	1960	0.10	2.41	15.77
Asia	Japan	I	17.2	1960	1.22	7.87	37.89
	Philippines	II	29.2	1960	0.70	5.48	31.09
	Israel	I	26.2	1961	0.28	3.56	22.19
	Cyprus	II	25.5	1960	0.20	5.05	28.61
	Ryukyu Islands	I	25.9	1960	3.57	9.00	41.04
Oceania	Western Samoa	II	34.9	1961	43.50	4.88	28.64
	American Samoa	I	42.6	1960	8.50	5.91	32.53
	New Zealand	I	26.7	1961	5.25	4.08	23.91

^aAccording to Cho (1964:365). Class I refers to countries with good census data and vital statistics. Class II refers to countries with a relatively accurate census, but poor vital statistics registration. Class III refers to countries having data only on age composition.

^bFor method of calculation see Appendix B.

conditions, only 4 percent of all births would have been illegitimate, whereas under the Jamaican model about 23 percent of all births would have been illegitimate. Relatively speaking, then, the actual illegitimacy ratio for Mexico approximates that produced under Jamaican conditions. Generally, the following countries approximate the Jamaican conditions: El Salvador, French Guiana, Dominican Republic, Panama, Puerto Rico, Guadeloupe, Venezuela, Peru, Seychelles, Angola, and Western Samoa. Those countries which exhibit illegitimacy levels parallel to Canadian conditions include: the United States, Sweden, Portugal, West Germany, Hungary, Czechoslovakia, Poland, Finland, Switzerland, Norway, Spain, Greece, Central African Republic, Mauritius, United Arab Republic, Japan, the Philippines, Israel, Cyprus, Ryukyu Islands, American Samoa, and New Zealand. From this, two broad clusterings seem apparent: (1) Central and South American countries patterned parallel to the Jamaican model; and (2) European, Oceanic, and most African countries patterned parallel to Canadian conditions.

4.3 Societies with High Levels versus Societies with Low Levels of Illegitimacy: The Case of Jamaica versus Canada.

Jamaican levels of illegitimacy are compared with Canadian levels of illegitimacy as examples of countries with high versus low levels of illegitimacy, respectively.

Major Features of Jamaican Illegitimacy. The high levels of Jamaican illegitimacy are often traced to the heritage of slavery. The transition from slavery to freedom introduced two major changes in the Jamaican family system:

. . . In the first place it provided a ready means of initiating such unions; in place of the indefinite way in which such unions were established during slavery a legally sanctioned mode of doing so was established. The fact that only a fraction of the unions after emancipation were initiated in this way meant in effect that for the first time in the history of the West Indies two distinct types of family unions could be distinguished, those resting on legal sanction and those not so based. Thus legitimacy-illegitimacy became a meaningful dichotomy among the Negro elements of the population. In the second place, in so far as it was no longer possible to disrupt a family union by the sale or removal of one of its members as was possible in slavery, the stability of the union, regardless of its legal status, rested solely on the attitude and action of the couple (Roberts, 1957:250).

The implication is that prevailing patterns of mating in Jamaica are long standing, and that their roots are couched in slavery. However, it might be possible that the observed high levels of illegitimacy are merely the obverse of low marriage rates. Therefore, an examination of select demographic components was undertaken to guard against this possibility.

Although the illegitimacy ratio increased only slightly (about 5 percentage points) in the last 20 years (Table 4.3), there was little potential for an increase when births out of wedlock were already as high as 71 percent in 1921-25. However, the rate, being limited only by the fecundity of the unmarried female population, rose from 114.76 to 189.53 between 1943 and 1960, an increase of about 65.0 percent (Hartley, 1969a:126). Generally, between 1921 and 1964, approximately 70.0 percent of all live births were illegitimate each year.

Table 4.4 reflects the stability of the proportions of women in each age group throughout the childbearing years 15-44. For the entire female population aged 15 to 44, 78.0 percent reported themselves unmarried in the 1943 census and 75.0 percent reported themselves unmarried in the 1960 census (Hartley, 1969a:135). Of course, a high

TABLE 4.3

ILLEGITIMACY RATES AND RATIOS,
JAMAICA, SELECT YEARS 1921-1964

Period	Rate ^a	Ratio ^b
1921-25	-----	71.63
1931-35	-----	71.81
1941	-----	69.71
1943	114.70	69.81
1948	113.50	69.09
1953	139.00	70.90
1957	168.20	72.00
1960	189.50	72.40
1964	-----	74.10

^aIllegitimate live births per 1,000 unmarried women aged 15-44.

^bIllegitimate births as a percentage of all live births.

Source: Adapted from Hartley, 1969a, Table 3.1, p. 131.

TABLE 4.4

PROPORTIONATE DISTRIBUTION OF ALL FEMALES
IN THE CHILDBEARING YEARS, 15-44,
AT THE MID-YEAR FOR THE DATES
SPECIFIED, JAMAICA

Age Groups	1943	1948	1953	1957	1960 ^a
15-19	.2112	.2150	.2185	.2145	.2198
20-24	.1950	.1940	.1969	.2020	.1957
25-29	.1866	.1729	.1711	.1730	.1765
30-34	.1580	.1616	.1520	.1510	.1469
35-39	.1349	.1392	.1389	.1366	.1411
40-44	.1143	.1173	.1226	.1229	.1200
15-44	1.0000	1.0000	1.0000	1.0000	1.0000

^aApril census of 1960.

Source: Hartley, 1969a, Table 3.2, p. 134.

proportion of unmarried women must be exposed to the "risk" of child-bearing if a high proportion of all births are to be illegitimate. However, this does not guarantee high illegitimacy ratios. For instance, both Jamaica and Japan have a high average age at marriage, yet Japan records only 1.0 percent of all births as illegitimate (Hartley, 1969a:137).

Age-Specific Illegitimate and Legitimate Fertility Rates for Jamaica. In Table 4.5, the age-specific illegitimate fertility rates are shown.

TABLE 4.5

AGE-SPECIFIC ILLEGITIMATE FERTILITY RATES,
JAMAICA, FOR STATED YEARS

Age Group	1943	1948	1953	1957	1960
15-19	----	90.91	105.17	135.40	----
20-24	----	185.21	222.91	247.99	----
25-29	----	147.88	192.88	228.68	----
30-34	----	97.12	130.51	162.72	----
35-39	----	63.49	73.94	99.67	----
40-44	----	21.09	23.88	30.23	----
15-44	114.76	113.47	139.03	168.24	189.53

Source: Adapted from Hartley, 1969a, Table 3.8, p. 150.

Although the highest illegitimacy rate was found in the 20-24 age group, the age group 30-34 changed the most between 1948 and 1957. Additional calculations revealed that among births to mothers aged 15-19, 94.0 to 95.0 percent are recorded as illegitimate. For mothers aged 20-24,

80.0 percent are illegitimate; while subsequent age categories showed a continuous decrease in the proportion of births which are illegitimate (Hartley, 1969a:151). But even for the oldest age group, 40-44, almost 40.0 percent of all births were illegitimate. Many mothers seem to complete their childbearing period in the unmarried state.

The increase in age-specific legitimate fertility rates (Table 4.6) has softened the impact of increasing illegitimacy rates on the ratio.

TABLE 4.6

AGE-SPECIFIC LEGITIMATE FERTILITY RATES,
JAMAICA, FOR THE YEARS STATED

Age group	1943	1948	1953	1957	1960
15-19	----	386.67	421.17	554.73	---
20-24	----	383.25	386.57	387.48	----
25-29	----	261.82	277.56	301.14	----
30-34	----	181.88	201.06	223.93	----
35-39	----	131.20	140.79	155.56	----
40-44	----	43.61	54.10	57.39	----
15-44	173.30	175.41	198.93	202.15	213.60

Source: Hartley, 1969a, Table 3.11, p. 158.

While general illegitimate rates were increasing by 65.0 percent, legitimate fertility rates increased by 23.0 percent (Hartley, 1969a:157). With a rather small change in the illegitimacy ratio, the substantial increase in the illegitimacy rate was initially surprising. Quite simply, the changes in the rate are almost wholly accounted for by the changing age-specific illegitimacy rates.

Socio-cultural Features of Jamaican Society. With this basic understanding of the main demographic components, it becomes important to gain some insight into the socio-cultural elements. Even with increasing urbanization, education, industrialization, and per capita income, the pattern of high illegitimacy remains unchanged (Hartley, 1969a:172-173). But this refers to overall levels of change. Are there substantial variations along class lines? Rodman (1966) assumes an interesting position with respect to Caribbean illegitimacy. He views it as a reflection of the "lower-class value stretch." Although there is general agreement on the high rates of illegitimacy and non-legal unions to be found in Caribbean societies, little agreement exists on whether these patterns of behavior are "normative" or "deviant" with respect to the value system of the society in question. Blake (1961) and Goode (1960) have taken the position that the non-legal marital unions and the resulting illegitimate children are deviant patterns of behavior, and that marriage and legitimate childbirth are normative. Rodman (1959; 1963) takes the position that both Blake and Goode are only partially correct. Both marriage and non-legal marital unions are normative:

. . . The dominant pattern within the lower class can best be described as a "lower-class value stretch"--the normative pattern within the lower class has been stretched so that, in addition to subscribing to the middle-class ideals of marriage and legitimate children, they have also come to subscribe to the pattern of non-legal unions and "illegitimate" children (Rodman, 1966:674).

This discussion is lengthy, and the point remains that sanctions on either the father or mother which might tend toward a reduction of illegitimacy are minimal. The Maintenance and Bastardy Laws of Jamaica

do make a man liable for the support of his illegitimate children, but the operation of these laws presents so many practical difficulties that they are invoked only infrequently (Hartley, 1969a:177). Consequently, the system of formal and informal rewards and punishments in Jamaica tends toward maximization of births out of wedlock. Perhaps Rodman has provided the best summary of the complex of factors associated with Jamaican illegitimacy by simply saying that the Jamaican population is the victim of "vulnerability to environmental circumstances" (Rodman, 1966:682).

Jamaican versus Canadian Illegitimacy. Probably the most striking demographic difference between Canadian and Jamaican illegitimacy was that the proportion of total unmarried females at age "x" has never been a highly significant factor in Jamaica. On the contrary, between 1941 and 1961, changes in this factor contributed significantly to the observed changes in Canadian illegitimacy. Changing levels of Jamaican illegitimacy were primarily related to changes in the age-specific illegitimate fertility rate. In Canada, the periods 1921-31 and 1961-66 exhibited changes in both the age-specific illegitimate and legitimate fertility rates. Canadian provinces demonstrated wide variations in the combinations of the three factors--the proportion of total unmarried females at age "x," the age-specific illegitimate fertility rate, and the age-specific legitimate fertility rate--which were associated with changes in illegitimacy but never did the factor, the age-specific illegitimacy rate, alone account for significant change. Although variations in Jamaican illegitimacy were associated with a single factor, the age-specific illegitimacy rate, the only single

demographic factor associated with changes in Canadian illegitimacy, the age-specific legitimacy rate, was found operative in the provinces of Alberta, Saskatchewan, and New Brunswick between 1931-41, and in Prince Edward Island over the period 1951-66.

It would be ludicrous to leave the reader with the impression that demographic factors alone account for observable patterns of behavior. Whatever data are examined on illegitimacy, it is necessary to correlate illegitimacy rates with a number of other factors in Western cultures that affect attitudes toward illegitimacy--some of these factors being of a socio-cultural nature (Goode, 1963:35). Legal controls form only a framework for social life. Were it solely a matter of law, illegitimacy would constitute no great hardship for bastards and their mothers. But it is doubtful that bastards could ever be given complete legal equality, or that such equality, if given, would eliminate illegitimacy (Davis, 1939a:229). Since illegitimacy is a matter of public opinion and attitude, as well as of law, its elimination as a legal concept would not alter the customary attitudes and sentiments. Probably, a great deal of the confused thinking surrounding the notion of illegitimacy is expressed in the following statement:

Too much of the thinking about illegitimacy, however, has been concerned with illicit relations. We must now raise the ridiculously obvious question of why illicit intercourse sometimes leads to the birth of bastards. Since intercourse does not necessarily bring conception, or conception bring parturition, illicit sexuality is a necessary but not a sufficient cause of the occurrence of illegitimacy (Davis, 1939a:221-222).

Of course, one absolute method of eliminating illegitimacy would be to abolish marriage and the family (Davis, 1939a:231). But Malinowski (1930 in Roberts, 1966b:25-41) would contend that such a course of

action would also abolish society since parenthood is the basis of social structure. Consequently, future changes in the reproductive institutions of societies with both high and low levels of illegitimacy cannot embrace among their aims the absolute abolition of illegitimacy but merely alterations in the amount, kind, and circumstances of it.

CHAPTER 5

CONCLUSIONS

5.1 Summary.

Recapitulating, the most central aim of this investigation was to conduct an holistic and exploratory investigation into the social phenomenon of illegitimacy. At most, it was felt that some "descriptive generalizations" might be generated--that is, generalizations stemming from direct observations which are on a low level of abstraction since they deal with the phenotype rather than the underlying constitution responsible for the appearances (Kaplan, 1964:114). The purpose of this chapter is to synthesize the thesis and to formulate avenues for future research.

Table 5.1 presents a summary of the three demographic components examined in Chapter 3. With respect to the demographic components examined, it was demonstrated that the age-specific illegitimate and legitimate fertility rates were major factors associated with the observed levels of Canadian illegitimacy between 1921 and 1941. Over the 1941-61 period, the proportion of total unmarried females at age "x" in conjunction with the age-specific legitimate fertility rate, the age-specific illegitimate fertility rate, or both, became an integral part of the demographic picture. For the most recent quinquennial period 1961-66, the age-specific illegitimate and legitimate fertility rates were the most significant factors.

TABLE 5.1

SUMMARY OF SIGNIFICANT DEMOGRAPHIC FACTORS
ASSOCIATED WITH CHANGES IN ILLEGITIMACY

Area	Period				
	1921-31	1931-41	1941-51	1951-61	1961-66
Canada	x,y	x,y	x,y,z	x,y,z	x,y
British Columbia	x,y	x,y	x,z	x	x,y
Alberta	-----	y	x,y	x,y,z	x,y
Saskatchewan	x,y	y	x,y,z	x,y,z	x,y
Manitoba	x,y	x,y	x,y,z	x,y,z	x,y
Ontario	x,y	x,y	x,y,z	x	x,y
Quebec	-----	x,y	x	x,y,z	x,y
New Brunswick	x,y	y	x,z	x	y
Prince Edward Island	x,y	x,y	x,y,z	y	y
Nova Scotia	x,y	x,y	x,y,z	x,y,z	x,y

x=age-specific illegitimate fertility rate (i_x) significant.

y=age-specific legitimate fertility rate (j_x) significant.

z=proportion of total unmarried females at age "x" (q_x) significant.

Source: Adapted from discussion in Chapter 3.

Between 1941 and 1951, significant changes occurred in the proportion of total unmarried females at age "x." From 1951 to 1961, these changes were on a more equal basis with the other factors. This parallels the changes in the fertility trends associated with the "baby

boom." A sizeable increase in the birth rate occurred as countries demobilized after World War II. "The boys" came home and started having the families that had been postponed. Consequently, between 1941 and 1951, the general rate of legitimacy rose substantially while the general rate of illegitimacy rose only slightly (see Tables 3.4A and 3.4B). Over the most recent quinquennial period 1961-66, the age-specific illegitimate and legitimate fertility rates showed marked changes, while the proportion of total unmarried females at age "x" ceased being a major contributor to the observed changes. The marriage gaps and gains resulting from the "baby boom" are quite apparent.

An examination of general patterns of illegitimacy among countries throughout the world led to the suggestion that illegitimacy in the "world community" was less of a continuous and more of a discrete phenomenon. Countries tended to occupy high or low positions with respect to their observed levels of illegitimate fertility whereas intermediate positions were seldom noticed. Hence, Canada and Jamaica were briefly compared as representatives of low and high levels of illegitimate fertility, respectively. While the demographic components (the proportion of total unmarried females at age "x," age-specific illegitimate and legitimate fertility rates) were all significant at some point in the historical pattern of Canadian illegitimacy, the only significant element associated with Jamaican illegitimacy was the age-specific illegitimate fertility rate. This led to a general discussion of some socio-cultural elements associated with Jamaican illegitimacy. In particular, an attempt was made to reconcile three socio-theoretical schools of thought regarding illegitimacy--cultural relativism,

cultural absolutism, and cultural relationism. In a subsequent discussion (Section 5.2), a demonstration is made of the necessity of synthesizing these three viewpoints. Since little or no attempt has been made to examine in depth the multitude of factors associated with Canadian illegitimacy (especially relative to the intensive research in the Caribbean area), the author asserts that a necessary condition to studies designed to isolate the socio-cultural factors associated with Canadian illegitimacy, involves an approach which is flexible enough, in the initial stages, to utilize relevant aspects of all three schools of thought. Some general notions must be gained before any of the present approaches can be accepted as "the best" theoretical framework. Nevertheless, the author acknowledges that "familiarity helps us see an explanation, but that it does not necessarily help us have one; it is fundamental to semantic explanation but may be quite unimportant for scientific explanations" (Kaplan, 1964:331). In this sense, the present inquiry claims to have met its principal obligation--the promotion of, and the illustration of, the necessity of macro-level analyses of the factors and trends associated with Canadian illegitimacy. Such is a necessary condition to more intensive research on the social phenomenon of illegitimacy.

5.2 Application and Remedies.

The following sub-sections suggest two interesting applications which may be useful in examining Canadian illegitimacy in the future.

The Significance of a Synthesis of Three Theoretical Positions on Illegitimacy. Roberts (1966a:13) visualizes a basic dichotomy

in the theoretical thinking about illegitimacy. First, there are those individuals who advocate a social explanation of the phenomenon; hence they tend to isolate differences in group rates of illegitimacy and to perceive causes in differing social forces which are imposed on various groups. Second, there are those persons whose notions have arisen from their clinical experiences gained in fields such as psychology, psychiatry, and social work. Among the attempts to explicate sociological explanations of illegitimacy, three broad theoretical positions include "cultural relativism," "cultural absolutism," and "cultural relationism"--henceforth called schools one, two, and three, respectively, for expedience. Christensen (1960) and Rodman (1959; 1966) exemplify positions related to the first school. Representatives of the second school include Malinowski (1930), Goode (1960), Blake (1961), and Hartley (1969a). The most outstanding representative of the third school is Vincent (1961).

Suggesting possibilities for future research on illegitimacy, Roberts came to the conclusion that each of the schools of thought warranted "further empirical testing on its own merit" (Roberts, 1966a:21). This seems plausible enough, and this author does not desire to critically elaborate on this notion. The point of contention between this author and Roberts arises in the determination of the initial research step. Roberts has suggested that the first step should be an empirical examination of the attitudes and behavior expressed toward illegitimacy by the various geographic, economic, and ethnic strata of our society (Roberts, 1966a:20). The present inquiry contends that the first step must be to gain some sort of macro-level or "Pisgah" perspective of the

phenomenon being investigated. Such an approach must encompass viable elements from all three schools of thought on illegitimacy. There is an inherent danger in presupposing a particular "school of thought" as an initial approach to the social phenomenon of illegitimacy. For instance, Clark E. Vincent (1954; 1960; 1961) has examined in considerable depth the phenomenon of illegitimacy in the United States. Both implicitly and explicitly, the following notions recur in his studies:

A theory of deviant sexual behavior is implicit throughout this book: that represented in Sutherland's concept of "differential association,"¹ modified by others to mean "differential identification"² with, and "differential access" to, deviant groups and traditional values.³ Briefly, it is that illicit sexual behavior is learned through identification and interaction with other persons within intimate personal groups in which communication and structured social practices provide definitions, more favorable than unfavorable, of illicit coition (Vincent, 1961:243, footnotes and underscoring in original text).

With the implicit parallels between American and Canadian society, especially of a socio-cultural and economic nature, researchers interested in Canadian illegitimacy might readily accept Vincent's notions and consequently the "cultural relationism school" as applicable to Canadian society. This may be a valid transition, but the inherent danger lies in such an acceptance at the initial stages of research. For instance, earlier in this study, it was demonstrated that Canadian illegitimacy was almost discernible along a clear-cut East-West continuum, with the exception of Nova Scotia. That is, Western provinces exhibited higher levels of illegitimacy than did the Eastern provinces. Perhaps the tertiary levels of industrialization in the Eastern provinces as opposed to the more primary-type industry in the Western provinces is associated with the observed levels of illegitimacy.

Perhaps a multitude of factors in a wide array of combinations underpins the phenomenon of illegitimacy. However, the implications are clear. A theoretical position such as Vincent's cultural relationism may simply not be applicable for Canada as a whole but only for selected "parts of this whole." Premature decisions regarding the validity of one theoretical position as opposed to another may grossly distort the entire picture. Having suggested that initial research remain flexible enough to incorporate all three approaches, the obvious question relates to how the three positions are intertwined. Earlier in this study (Section 4.3), the author demonstrated how Rodman (1966) had reconciled the notions of Goode (1960) and Blake (1961). That is, Rodman's conception of the "lower-class value stretch" provided a partial synthesis of the cultural relativism and cultural absolutism theoretical positions. Vincent (1961) as a proponent of cultural relationism stresses that the phenomenon of illegitimacy is closely related to the norms of a particular society. In addition, Vincent subscribes to Malinowski's "Principle of Legitimacy" (Roberts, 1966a:17). Now Malinowski can be distinguished as a representative of the cultural absolutism school. And since Malinowski (1930) clearly envisions the importance of parenthood as the basis of the social structure, he would also concede that Rodman (1966) was correct in asserting that both marriage and non-marital unions can be seen as normative. Broadly, all that has been accomplished is to explicate the continuity within these theoretical positions. Consequently, primary research on Canadian illegitimacy should commence with the synthesis of the theoretical positions on unwed parenthood.

Illegitimacy and the Theory of Demographic Transition:

a Tentative Relationship. An intriguing application of a portion of the present inquiry relates to the basic formulations of the demographic transition model, first explicated by Warren Thompson (1929) and Frank Notestein (1945). Classically, three possible positions characterize a country at the "old balance": (1) high potential growth--high birth and high death rates; (2) transitional growth--high birth and low death rates; and (3) incipient decline--low birth and low death rates. Of course, modifications have occurred to the demographic transition model, but not in the basic formulations. Changes have been in sub-categorizations and more explicit definition of what criteria place a country within each of the successive stages. Presently, Jamaican society might best be labelled as "midtransitional," characterized by a lowering of both the death and birth rates; however, the birth rates are higher than the death rates (Bogue, 1969:56). An examination of the trends in the crude birth and death rates in Table 5.2 substantiates this notion. Recall that earlier in this inquiry it was observed that countries throughout the world tended to exhibit high or low levels of illegitimacy, with relatively few reflecting intermediate levels. Now, consider Thomlinson's analogy as to how a country progresses through the demographic transition:

. . . The first state in the transition theory can be linked to a coiled spring, the second to a forceful expansion following release of restraining pressure, and the third to a relaxed, unwound spring with its force largely expanded (Thomlinson, 1965:23).

If Thomlinson's analogy is representative of the time progression of the transition process, the important implication is that a country may

TABLE 5.2

CRUDE BIRTH AND CRUDE DEATH RATES,
JAMAICA, SELECTED YEARS, 1920-67

Year	CBR	CDR
1920-24	37.9 ^a	24.4 ^b
1930-34	34.1 ^a	18.1 ^b
1940	30.8 ^a	15.4 ^b
1950	33.1 ^a	11.8 ^b
1960	42.0 ^c	8.9 ^{*d}
1961	40.2 ^c	8.6 ^e
1962	40.2 ^c	8.5 ^e
1963	39.3 ^c	8.9 ^e
1964	39.8 ^c	7.7 ^e
1965	39.4 ^{*c}	7.9 ^e
1966	38.8 ^f	7.8 ^g
1967	35.4 ^{*f}	7.0 ^{*g}

*Provisional.

^aU.N. Department of Economic Affairs, 1952, Table 10, pp. 226-227.

^bU.N. Department of Economic Affairs, 1952, Table 16, pp. 266-267.

^cU.N. Department of Economic and Social Affairs, 1966, Table 12, p. 287.

^dU.N. Department of Economic and Social Affairs, 1964, Table 23, p. 543.

^eU.N. Department of Economic and Social Affairs, 1966, Table 42, p. 734.

^fU.N. Department of Economic and Social Affairs, 1969, Table 13, p. 334.

^gU.N. Department of Economic and Social Affairs, 1969, Table 18, p. 378.

proceed rapidly through the intermediate, or second major stage of the demographic transition. Although speculative, a plausible supposition would be that as Jamaica moves out of the transitional stage and into the stage of incipient decline, the large reductions in fertility will be paralleled by a large reduction in the incidence of illegitimacy. Of course, this appears to be common-sense; however, what the author really implies is that such a reduction will not simply occur in the total number of illegitimate births, but also in the proportion of total live births which are illegitimate. That is, the processes of modernization and industrialization are associated not only with the completion of the demographic transition, but furthermore with the movement from high to low levels of illegitimacy almost directly.

High levels of illegitimacy move through transition to lower levels of illegitimacy without stabilizing at some intermediate stage. Such a movement may characterize an internal component of the more general demographic transition model.

5.3 Implications, Speculations, and Challenges for Future Research.

Little research into Canadian illegitimacy has been launched. This study has attempted to lay part of the foundation upon which future studies should build. A by-product of every inquiry is the generation of interesting and important research questions. This inquiry has generated many interesting questions not merely as a by-product, but with a greater degree of intention. Implications for future research are reflected in the statistical, demographical, theoretical (or some combination of these) issues raised.

Few studies concerned specifically with illegitimacy have defined a research problem and proceeded in accordance with standard research methods to collect the data necessary for acceptance or rejection of hypotheses. This inquiry does not deny this need; however, the primary need was designated to be the creation of a basis upon which hypotheses might be formulated. One notable study which has developed and tested hypotheses with respect to illegitimacy in the United States was Vincent's Unmarried Mothers. Elizabeth Herzog, reviewing Vincent's study, points out that the refreshing part of Vincent's effort was the refusal to settle for the captive-audience approach that has so long distorted our picture of unmarried mothers, and accordingly has warped our ideas about possible causes and cures of problems relating to illegitimacy (Herzog, 1962:158). Vincent's findings raise questions about a number of opinions that sometimes parade as facts. However, he recognizes that his study will require explication before it can be extended to sweeping generalizations. Perhaps a new and distinctively Canadian perspective on Canadian illegitimacy may lend such support.

Many intriguing and worthwhile questions have arisen. With the reduction in the social stigma by the indirect mechanism for collecting statistical data on illegitimacy in California, a significant question is raised regarding Canadian legislation. Would similar legislation for Canada as a whole, and/or some of the provinces, improve the present class-selective under-reporting of illegitimacy in Canada?

Recognizing the inherent difficulties associated with the application of rates and ratios to the measurement of illegitimacy, the demographic analysis of this inquiry adopted a supposedly more

sensitizing standardization technique using illegitimacy rates. Should unique methodological "tools" be developed to specifically "measure" the incidence of illegitimacy? From a cross-cultural perspective, should such "measures" be designed to fit the cultural "definition of the situation"?

From the observed and nearly clear-cut split into East-West provincial levels of illegitimacy in Canada, many interesting implications arise. Having demographically demonstrated that the changes in illegitimacy were "real" and not merely artifacts of changes in the demographic bases of the Canadian population, one interesting question relates to the extent of female labor force participation between Eastern and Western provinces. Could a higher level of female labor force participation in Eastern provinces have served to keep illegitimacy in the Eastern provinces lower than in the Western provinces?

A most intriguing avenue for research is created by the observation of the rapid and substantial increase in illegitimacy in all Canadian provinces between 1961-66. In addition, the prime demographic components associated with the 1961-66 increases for Canada as a whole paralleled the important components between 1921-41. Why did this pattern re-emerge? Are the non-demographic components of the 1961-66 pattern similar to those associated with the 1921-41 pattern? With a major Canadian census only a few months away, will the 1961-66 increases be maintained over the 1966-71 quinquennial period?

Socio-cultural studies into Canadian illegitimacy at a macro-level of analysis are non-existent. On the contrary, theoretical investigations of a socio-cultural nature are very prevalent in the

Caribbean region. Initial studies of a similar nature in Canada should acknowledge and consider the implications of this research. In particular, a critical attitude toward the application of American (U.S.) legal and normative systems into research on Jamaican illegitimacy may aid in avoiding bias in Canadian research.

Rodman's (1959, 1963) conception of the "lower-class value stretch" with respect to Jamaican illegitimacy provides an interesting approach. Could his approach be applied to class variations in Canadian illegitimacy? What would be the implications of a study of Canadian and Jamaican illegitimacy as opposed to a study of American (U.S.) and Jamaican illegitimacy? It was observed that the demographic factor, the proportion of total unmarried females at age "x" was significant during certain periods for Canadian illegitimacy, but never for Jamaican illegitimacy. Is the American pattern similar? Could this reflect one point of variation between illegitimacy in Canada versus the United States?

From the analysis of this investigation, a tentative relationship between illegitimacy and the theory of demographic transition was formulated. Researchers should be interested in pursuing this topic since most countries have conducted or will be conducting major censuses in 1970 or 1971. The data collected will serve to improve the time-lag bias of this inquiry by a decade. Will Canada's position in the "world community," with respect to illegitimacy, alter?

Some societies (e.g., Santal) have almost no reported illegitimacy. The implication is not that illegitimates are never conceived and born, but merely that appropriate mechanisms exist for legitimation. If and where abortion is inexpedient, special ceremonies serve to legitimate

the child. Would the legalization of abortions in Canada reduce the incidence of reported illegitimacy to a level comparable with Santal society? Would a country such as Canada require additional mechanisms besides abortion to substantially reduce reported illegitimacies? Or, might legalized abortion laws serve to improve statistics on illegitimacy?

All possible avenues for future research generated by this thesis have not been explicated. Many possibilities exist. Certainly, the opinionated bias accusing groups such as Native Indians or French-Canadians in Quebec for rising levels of illegitimacy is as mythical as the accusations directed against 15-19 year-old females. This inquiry has attempted to explicate a few of the necessary foundations required to conduct intensive research into the social phenomenon of illegitimacy. Researchers must conceive of unique and viable ways to examine Canadian illegitimacy, untainted by the bias of past endeavors.

5.4 Limitations and Pitfalls to Avoid.

The prospectus to this investigation exemplifies the highly optimistic attitude as an idealist with respect to the extent to which theory and empiricism team together in a mutually, and well-balanced, reinforcing cycle. Presently, the impressions remaining are somewhat less optimistic about the apparent ease with which theory and research intertwine. This is not to underestimate the importance of this goal, but rather to realistically recognize that "the task is not to move from wholesale ignorance to knowledge, but to move from knowledge of some things to knowledge of others, from the vague and uncertain to

what is clear and warranted" (Kaplan, 1964:86-87). In part, this dilemma is reflected in the very socialization process by which researchers are trained. Like the natural scientist, the social scientist also aspires to "closure" of ideas. Closure is a condition for maximization of the reduction of uncertainty. However, premature closure is inherently dangerous:

. . . There is a certain kind of behavioral scientist who, at the least threat of an exposed ambiguity, scurries for cover like a hermit crab into the nearest abandoned logical shell. But there is no ground for panic. That a cognitive situation is not as well structured as we would like does not imply that no inquiry made in that situation is really scientific. On the contrary, it is the dogmatisms outside science that proliferate closed systems of meaning; the scientist is in no hurry for closure. Tolerance of ambiguity is as important for creativity in science as it is anywhere else (Kaplan, 1964:71).

More than ever before, the author is keenly aware of how these problems are internally and externally connected with the present inquiry.

Regarding the intensive analysis of Canadian illegitimacy (Chapter 3), the reader should realize that the social phenomenon labelled "illegitimacy" may be highly under-estimated (ten percent may well be a reasonable guess). Consequently, explicated trends, especially at the provincial levels, may be quite different in actuality. As long as the social stigma is attached, illegitimacy statistics will remain biased in a downward direction. A second noteworthy problem is that associated with small numbers (absolute terms) being converted to proportionate numbers (relative terms). This difficulty was especially acute in the case of Prince Edward Island; however, this province was not excluded from the analysis because of the probably great under-estimation of illegitimacy. Furthermore, the most important aspect of

the numerical portions of this study was general trends and not differences of magnitude. A third difficulty centered around inconsistent totals, especially for early census dates such as 1921 and 1931. Such is probably a reflection of the less precise editing, coding, and tabulation procedures. A fourth pitfall relates to the necessity of estimating the absolute number of females of various marital statuses for 1951. Solely for the provinces, published data did not consistently provide data by five-year age groups. Between ages 20-49, data were presented by ten-year age groups. However, the overall impact of the estimations would be slight since the same procedure was followed for every province. Furthermore, the calculated trends in this inquiry run parallel to the more general trends explicated elsewhere (e.g., Henripin, 1968). Perhaps a fifth pitfall relates to the confidence placed on the methodologies utilized--in the case of Chapter 3, on Kumar (1969).

Inherent difficulties associated with the cross-cultural analyses (Chapter 4) are presented throughout the inquiry. The consequence of recognizing such problems was to discuss the general as opposed to the particular features. Other problems included the ontological bias of the researcher in choosing the criteria to limit the number of countries examined, and in choosing Jamaica versus Canada for a more detailed examination. In addition, the reader should remain conscious of the fact that cross-cultural data were primarily gathered from one source type--United Nations publications. If the data had been gathered directly from statistical offices of the respective countries, an entirely different picture may have emerged because of variations in correction and estimation procedures employed.

Ultimately, the most significant pitfall is reflected by the selective bias of this researcher as well as his ability to perceive and interpret the most meaningful relationships on both the theoretical and empirical levels. At the very least, this study has clearly illustrated the selective and conditional nature of our information about illegitimacy. Perhaps a viable alternative has just been created. The author gratefully acknowledges other alternatives to those explicated here.

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A P P E N D I C E S

APPENDIX A

METHOD USED TO EVALUATE THE SIGNIFICANCE
OF THE SELECTED DEMOGRAPHIC COMPONENTS
IN CHAPTER 3

This appendix explicates the standardization procedure employed by Kumar (1969) in the evaluation of the significance of the selected demographic variables examined in Chapter 3. Since the method for calculations and procedures are identical for Canada and the Provinces, a step-by-step demonstration of the technique is given only for Canada as a whole.

For purposes of the present inquiry, an illegitimate birth is one which occurs to an unmarried (single, widowed, or divorced) female. Consequently, any birth occurring to a currently married female is legitimate. For the sake of expedience, the following symbols used are designated as follows:

- (1) f_x = proportion at age "x" of all females in the childbearing period (in this instance, for 5-year age groups between 15-49);
- (2) q_x = proportion of total females at age "x" who are unmarried;
- (3) i_x = age-specific illegitimate fertility rate (number of illegitimate births per unmarried female of age "x" per year);
- (4) j_x = age-specific legitimate fertility rate (number of legitimate births per married female of age "x" per year);
- (5) $\sum f_x q_x$ = the overall probability of being single in the childbearing ages (overall proportion single in the childbearing ages);
- (6) $\sum f_x q_x i_x$ = the overall probability of giving birth to an

illegitimate child by a female in the child-bearing ages in a population with a given age and marital distribution (the general rate of illegitimacy);

- (7) $\sum f_x(1-q_x)j_x$ = the overall probability of giving birth to a legitimate child by a female in the child-bearing ages in a population with a given age and marital distribution (the general rate of legitimacy).

A more complete description and derivation for $\sum f_x q_x$, $\sum f_x q_x i_x$, and $\sum f_x(1-q_x)j_x$ is provided by Kumar (1969:94-96).

Tables A-1 to A-4 list the values of the four basic demographic components (f_x , q_x , i_x , and j_x) for Canadian census years from 1921-66. All subsequent calculations for Canada as a whole are based on the data in these four tables. The input data to arrive at these primary tables is self-evident from the definition of each symbol.

TABLE A-1

AGE-DISTRIBUTION OF FEMALES IN CHILDBEARING
AGES (f_x): CANADA

Age	1921	1931	1941	1951	1961	1966
15-19	0.187	0.200	0.188	0.152	0.167	0.194
20-24	0.169	0.174	0.174	0.159	0.141	0.156
25-29	0.159	0.146	0.162	0.167	0.141	0.133
30-34	0.145	0.132	0.139	0.153	0.149	0.130
35-39	0.136	0.128	0.123	0.143	0.151	0.136
40-44	0.113	0.116	0.111	0.122	0.132	0.135
45-49	0.093	0.102	0.102	0.103	0.118	0.117

Sources: Calculated from base data obtained from D.B.S., 1962,
Table 20.

TABLE A-2

PROPORTIONS OF FEMALES UNMARRIED AT AGE "X"
(q_x): CANADA

Age	1921	1931	1941	1951	1961	1966
15-19	0.934	0.949	0.943	0.921	0.913	0.924
20-24	0.576	0.634	0.615	0.488	0.408	0.446
25-29	0.305	0.333	0.344	0.215	0.163	0.159
30-34	0.201	0.207	0.240	0.156	0.119	0.109
35-39	0.172	0.173	0.207	0.152	0.115	0.105
40-44	0.178	0.172	0.201	0.168	0.130	0.117
45-49	0.197	0.186	0.211	0.188	0.195	0.147

Sources: Calculated from base data obtained from
D.B.S., 1968, Table 34
D.B.S., 1963b, Table 78
D.B.S., 1953, Table 1
D.B.S., 1946, Table 7
D.B.S., 1935, Table 12
D.B.S., 1925, Table 29

Note: Data categorized as "not stated" in 1921, 1931 and 1941
was omitted.

TABLE A-3

AGE-SPECIFIC ILLEGITIMATE FERTILITY RATES

 (i_x) : CANADA

(Number of illegitimate births per unmarried female of age "x")

Age	1921	1931	1941	1951	1961	1966
15-19	0.0029	0.0055	0.0052	0.0091	0.0118	0.0136
20-24	0.0051	0.0094	0.0116	0.0185	0.0281	0.0301
25-29	0.0037	0.0074	0.0099	0.0182	0.0299	0.0359
30-34	0.0034	0.0057	0.0067	0.0128	0.0220	0.0260
35-39	0.0022	0.0043	0.0049	0.0074	0.0124	0.0145
40-44	0.0009	0.0015	0.0019	0.0024	0.0039	0.0046
45-49	0.0002	0.0002	0.0003	0.0002	0.0002	0.0003

Sources: Calculated from base data obtained from D.B.S., 1923, Table 4, pp. 28-29; D.B.S., 1933, Table 26, pp. 56-57; D.B.S., 1944a, Table 35, pp. 68-69; D.B.S., 1954a, Table 33, pp. 102-103; D.B.S., 1963a, Table B-10, p. 105; D.B.S., 1968b, Table B-10, p. 79.

TABLE A-4

AGE-SPECIFIC LEGITIMATE FERTILITY RATES

 (j_x) : CANADA

(Number of legitimate births per married female of age "x")

Age	1921	1931	1941	1951	1961	1966
15-19	0.3042	0.4805	0.4497	0.4783	0.5205	0.4491
20-24	0.2376	0.3565	0.3392	0.3403	0.3648	0.2728
25-29	0.1738	0.2571	0.2372	0.2421	0.2500	0.1830
30-34	0.1275	0.1804	0.1580	0.1644	0.1582	0.1102
35-39	0.0889	0.1228	0.0990	0.0980	0.0882	0.0612
40-44	0.0375	0.0524	0.0388	0.0357	0.0314	0.0206
45-49	0.0055	0.0064	0.0044	0.0035	0.0027	0.0019

Sources: Calculated from base data obtained from D.B.S., 1923, Table 4, pp. 28-29; D.B.S., 1933, Table 26, pp. 56-57; D.B.S., 1944a, Table 35, pp. 68-69; D.B.S., 1954a, Table 33, pp. 102-103; D.B.S., 1963a, Table B-10, p. 105; D.B.S., 1968b, Table B-10, p. 79.

Tables A-5 to A-10 illustrate the calculations made using data from Tables A-1 to A-4 to arrive at the basic data required to calculate the final tables as presented in the text of Chapter 3. For example, in Table A-5 the sum $\sum f_x q_x$ means that 41.1 percent of the females aged 15-49 were unmarried in Canada in 1921. The sum $\sum f_x q_x i_x$ implies that the probability of bearing an illegitimate child by a female aged 15-49 years was .0013 (1.3 illegitimate births per 1,000 females of childbearing age in 1921). The sum $\sum f_x (1-q_x) j_x$ implies that the probability of bearing a legitimate child by a female 15-49 years old was .0687 (68.7 legitimate births per 1,000 females of childbearing age in 1921). It should be noted that the sums $\sum f_x q_x i_x$ and $\sum f_x (1-q_x) j_x$ are not the exact expressions of the respective probabilities. They should be regarded as estimates because i_x and j_x are the central-rates for the period rather than the probabilities (Kumar, 1969:95). In spite of this limitation, the term "probability" was used because it provides a consistent way of defining the term "level of illegitimacy," and the various measures.

The value of the illegitimacy ratios and rates in Tables A-5 to A-10 are derived from the following equations:

$$\begin{aligned}
 (1) \quad \text{Illegitimacy Ratio} &= \frac{\sum f_x q_x i_x}{\sum f_x q_x i_x + \sum f_x (1-q_x) j_x} \\
 (2) \quad \text{Illegitimacy Rate} &= \frac{\sum f_x q_x i_x}{\sum f_x q_x}
 \end{aligned}$$

In Chapter 3, the analysis of the trend of illegitimacy for Canada and the Provinces (Tables 3.4A and 3.4B through 3.13A and 3.13B)

drew their basic data from Tables A-5 to A-10. For example, Columns 2, 3 and 4 of Tables 3.4A and 3.4B are abstracted and presented in Table A-11. The data for Columns 2 and 3 (Table A-11) were obtained directly from Tables A-5 and A-6, respectively. To obtain the results shown in Column 4 of Table A-11:

- (1) i_x and j_x values were taken from Tables A-3 and A-4 respectively, for Canada in 1921;
- (2) f_x and q_x values were obtained from Tables A-1 and A-2, respectively, for Canada in 1931;
- (3) the procedure outlined in any of Tables A-5 to A-10 was then carried out. The results of calculations for 1931* are shown in Column 4 of Table A-11.

The same procedure, varying only in the values of f_x , q_x , i_x and j_x was used to obtain values for 1941*, 1951*, 1961* and 1966.* Furthermore, several combinations of these factors were used in the initial calculations before the most insightful and significant results (shown finally in Tables 3.4A and 3.4B through 3.13A and 3.13B) were obtained. Decisions as to which factors to standardize by were partly intuitive, depending upon the observed changes in the values of $\sum f_x q_x$, $\sum f_x q_x i_x$, and $\sum f_x (1-q_x) j_x$ between two census dates. In addition, various combinations of factors were examined whenever the standardized results did not approximate the comparison values, for example, 1931* values with 1921 values.

TABLE A-5
COMPUTATION OF THE ILLEGITIMACY RATIO AND RATE,
CANADA, 1921

Age Groups	f_x	q_x	$1-q_x$	$f_x q_x$	i_x	$f_x(1-q_x)$	j_x	$f_x q_x i_x$	$f_x(1-q_x)j_x$
15-19	.187	.934	.066	.174658	.0029	.012342	.3042	.000507	.003754
20-24	.169	.576	.424	.097344	.0051	.071656	.2376	.000496	.017026
25-29	.159	.305	.695	.048495	.0037	.110505	.1738	.000179	.019206
30-34	.145	.201	.799	.029145	.0034	.115855	.1275	.000099	.014772
35-39	.136	.172	.828	.023392	.0022	.112608	.0889	.000052	.010011
40-44	.113	.178	.822	.020114	.0009	.092886	.0375	.000018	.003483
45-49	.093	.197	.803	.018321	.0002	.074679	.0055	.000004	.000411

$\sum f_x q_x$ = .411469
 $\sum f_x q_x i_x$ = .001355
 $\sum f_x(1-q_x)j_x$ = .068663
 $N = 2,136,162$ = number of females in childbearing ages, 15-49.
 Illegitimacy ratio (equation 1) = 19.4 (illegitimate births per 1,000 total births).
 Illegitimacy rate (equation 2) = 3.3 (illegitimate births per 1,000 unmarried females 15-49).

TABLE A-6

COMPUTATION OF THE ILLEGITIMACY RATIO AND RATE,
CANADA, 1931

Age Groups	f_x	q_x	$1-q_x$	$f_x q_x$	i_x	$f_x(1-q_x)$	j_x	$f_x q_x i_x$	$f_x(1-q_x) j_x$
15-19	.200	.949	.051	.189800	.0055	.010200	.4805	.001044	.004901
20-24	.174	.634	.366	.110316	.0094	.063684	.3565	.001037	.022703
25-29	.146	.333	.667	.048618	.0074	.097382	.2571	.000360	.025037
30-34	.132	.207	.793	.027324	.0057	.104676	.1804	.000156	.018884
35-39	.128	.173	.827	.022144	.0043	.105856	.1228	.000095	.012999
40-44	.116	.172	.828	.019952	.0015	.096048	.0524	.000030	.005033
45-49	.102	.186	.814	.018972	.0002	.083028	.0064	.000004	.000531

$\sum f_x q_x = .437126$
 $\sum f_x q_x i_x = .002726$
 $\sum f_x(1-q_x) j_x = .090088$
 $N = 2,570,226$

= number of females in childbearing ages, 15-49.
 Illegitimacy ratio (equation 1) = 29.4 (illegitimate births per 1,000 total births).
 Illegitimacy rate (equation 2) = 6.2 (illegitimate births per 1,000 unmarried females 15-49).

TABLE A-7

COMPUTATION OF THE ILLEGITIMACY RATIO AND RATE,
CANADA, 1941

Age Groups	f_x	q_x	$1-q_x$	$f_x q_x$	i_x	$f_x(1-q_x)$	j_x	$f_x q_x i_x$	$f_x(1-q_x) j_x$
15-19	.188	.943	.057	.177284	.0052	.010716	.4497	.000922	.004819
20-24	.174	.615	.385	.107010	.0116	.066990	.3392	.001241	.022723
25-29	.162	.344	.656	.055728	.0099	.106272	.2372	.000552	.025208
30-34	.139	.240	.760	.033360	.0067	.105640	.1580	.000224	.016691
35-39	.123	.207	.793	.025461	.0049	.097539	.0990	.000125	.009656
40-44	.111	.201	.799	.022311	.0019	.088689	.0388	.000042	.003441
45-49	.102	.211	.789	.021522	.0003	.080478	.0044	.000006	.000354

$\sum f_x q_x = .442676$
 $\sum f_x q_x i_x = .003112$
 $\sum f_x(1-q_x) j_x = .082892$
 $N = 2,953,871$
 Illegitimacy ratio (equation 1) = 36.2 (illegitimate births per 1,000 total births).
 Illegitimacy rate (equation 2) = 7.0 (illegitimate births per 1,000 unmarried females 15-49).

TABLE A-8

COMPUTATION OF THE ILLEGITIMACY RATIO AND RATE
CANADA, 1951

Age Groups	f_x	q_x	$1-q_x$	$f_x q_x$	i_x	$f_x(1-q_x)$	j_x	$f_x q_x i_x$	$f_x(1-q_x)j_x$
15-19	.152	.921	.079	.139992	.0091	.012008	.4783	.001274	.005743
20-24	.159	.488	.512	.077592	.0185	.081408	.3403	.001435	.027703
25-29	.167	.215	.785	.035905	.0182	.131095	.2421	.000653	.031738
30-34	.153	.156	.844	.023868	.0128	.129132	.1644	.000306	.021229
35-39	.143	.152	.848	.021736	.0074	.121264	.0980	.000161	.011884
40-44	.122	.168	.832	.020496	.0024	.101504	.0357	.000049	.003624
45-49	.103	.188	.812	.019364	.0002	.083636	.0035	.000004	.000293

$$\sum f_x q_x = .338953$$

$$\sum f_x q_x i_x = .003882$$

$$\sum f_x(1-q_x)j_x = .102214$$

$$N = 3,460,778$$

Illegitimacy ratio (equation 1) = 36.6 (illegitimate births per 1,000 total births).

Illegitimacy rate (equation 2) = 11.5 (illegitimate births per 1,000 unmarried females 15-49).

TABLE A-9

COMPUTATION OF THE ILLEGITIMACY RATIO AND RATE
CANADA, 1961

Age Groups	f_x	q_x	$1-q_x$	$f_x q_x$	i_x	$f_x(1-q_x)$	j_x	$f_x q_x i_x$	$f_x(1-q_x)j_x$
15-19	.167	.913	.087	.152471	.0118	.014529	.5205	.001799	.007562
20-24	.141	.408	.592	.057528	.0281	.083472	.3648	.001617	.030451
25-29	.141	.163	.837	.022983	.0299	.118017	.2500	.000687	.029504
30-34	.149	.119	.881	.017731	.0220	.131269	.1582	.000390	.020767
35-39	.151	.115	.885	.017365	.0124	.133635	.0882	.000215	.011787
40-44	.132	.130	.870	.017160	.0039	.114840	.0314	.000067	.003606
45-49	.118	.195	.805	.023010	.0002	.094990	.0027	.000005	.000256

$$\sum f_x q_x = .308248$$

$$\sum f_x q_x i_x = .004780$$

$$\sum f_x(1-q_x)j_x = .103933$$

$$N = 4,221,451$$

Illegitimacy ratio (equation 1) = 44.0 (illegitimate births per 1,000 total births).

Illegitimacy rate (equation 2) = 15.5 (illegitimate births per 1,000 unmarried females 15-49).

TABLE A-10

COMPUTATION OF THE ILLEGITIMACY RATIO AND RATE
CANADA, 1966

Age Groups	f_x	q_x	$1-q_x$	$f_x q_x$	i_x	$f_x(1-q_x)$	j_x	$f_x q_x i_x$	$f_x(1-q_x) j_x$
15-19	.194	.924	.076	.179256	.0136	.014744	.4491	.002438	.006622
20-24	.156	.446	.554	.069576	.0301	.086424	.2728	.002094	.023576
25-29	.133	.159	.841	.021147	.0359	.111853	.1830	.000759	.020469
30-34	.130	.109	.891	.014170	.0260	.115830	.1102	.000368	.012764
35-39	.136	.105	.895	.014280	.0145	.121720	.0612	.000207	.007449
40-44	.135	.117	.883	.015795	.0046	.119205	.0206	.000073	.002456
45-49	.117	.147	.853	.017199	.0003	.099801	.0019	.000005	.000190

$$\sum f_x q_x = .331423$$

$$\sum f_x q_x i_x = .005944$$

$$\sum f_x(1-q_x) j_x = .073526$$

$$N = 4,692,338$$

Illegitimacy ratio (equation 1) = number of females in childbearing ages, 15-49.

Illegitimacy ratio (equation 1) = 74.8 (illegitimate births per 1,000 total births).

Illegitimacy rate (equation 2) = 17.9 (illegitimate births per 1,000 unmarried females 15-49).

TABLE A-11

ANALYSIS OF THE TREND OF ILLEGITIMACY
CANADA, 1921-1931

Item	1921	1931	1931* ($i_x, j_x = 1921$)
(1)	(2)	(3)	(4)
$\sum f_x q_x$	0.411469	0.437126	0.437126
$\sum f_x q_x i_x$	0.001355	0.002726	0.001457
$\sum f_x (1 - q_x) j_x$	0.068663	0.090088	0.061974
Illegitimacy ratio	19.4	29.4	23.0
Illegitimacy rate	3.3	6.2	3.3

Values in Column 4 are compared with the values in Column 2, i.e., 1931 with 1921.

Sources: Tables 3.4A and 3.4B.

Note: Figures not rounded off in Table A-11.

APPENDIX B

STANDARDIZATION PROCEDURES
USED IN THE ANALYSIS OF
CROSS-CULTURAL VARIATIONS
IN ILLEGITIMACY
(CHAPTER 4)

In the 4th chapter, Canadian levels of illegitimacy were briefly examined in a "world perspective" (see Tables 4.1 and 4.2). The technique of standardization adopted for this inquiry was modelled after a discussion by Shirley Hartley (1970). According to Hartley, the principal advantages of this standardization procedure include: (1) the ability to see the effect of both differential legitimate and illegitimate fertility--across the rows--and differential marital distributions for the countries--looking down columns--at one glance (see Table 4.2); (2) for those countries which do not report any age-specific illegitimacy rates, one can see to which model the reported ratio most closely fits; and (3) for countries without any data on illegitimacy, it is possible to make some fairly reasonable predictions.

The procedure (as in Hartley, 1970:100-101) is outlined in the subsequent discussion using Canada as the model country. Because of the extent of the calculations, the calculations using Jamaica as the model country are not shown. The procedures in the method of calculation is exactly the same as for Canada.

For indirect standardization, fertility rates of a standard or model country (in this study, Canada and Jamaica) are plotted against the observed population of one or more countries (36 in this instance) according to the relevant age groups. The relevant components are illegitimate births as these relate to unmarried women (single, widowed or divorced) and in legitimate births as these relate to married women (in the case of Jamaica, consensually married in included as married) at specified ages. According to Hartley, if:

- (1) I = the total number of illegitimate births to women aged 15 to 49 years for nation "n,"

- (2) I' = the number of births out of wedlock under illegitimate fertility rates of a model or standard country under the observed age and marital status conditions of the named country,
- (3) U_x = the number of unmarried women at ages X to $X + 5$ for the named country,
- (4) U'_x = the number of unmarried women at ages X to $X + 5$ for the model country,
- (5) $i'_x = I'_x/U'_x$ = the age-specific illegitimate fertility rates of the model or standard country,

then, the formula for indirect standardization is:

$$I' = \sum U_x(I'_x/U'_x) = \sum U_x i'_x$$

In an analogous fashion, it is necessary to determine the number of births which would be legitimate under the varying model country's legitimate fertility rates. The formula for indirect standardization becomes:

$$L' = \sum M_x(L'_x/M'_x) = \sum M_x l'_x$$

where:

L' = the total number of legitimate births under the legitimate fertility rates of a model or standard country;

M_x = the number of married women at ages X to $X + 5$ for the named country,

M'_x = the number of married women at ages X to $X + 5$ for the model country,

$l'_x = L'_x/M'_x$ = the age-specific legitimate fertility rates for the model country.

Using Canadian data for 1961 (i.e., Canada as the model country), the substantive calculations of this procedure are illustrated in

Tables B-1 and B-2. In Table B-1, the procedure is shown for obtaining the age-specific illegitimate and legitimate fertility rates for the model country. Table B-2 applies the standardization procedure to Mexico, as an example. This procedure was applied to all 36 countries selected.

The final step is to calculate the illegitimacy ratio for Mexico, 1960, as per the illegitimacy rates for Canada in 1961. The formula used was as follows:

$$R' = \frac{I'}{I' + L'} \cdot K$$

where:

R' = standardized ratios as per the rates of some model country,

I' = the number of births out of wedlock under illegitimate fertility rates of a model or standard country under the observed age and marital status conditions of the named country,

L' = the total number of legitimate births under the legitimate fertility rates of a model or standard country

K = constant, usually 100.

In the example of Mexico, substituting for the symbols results in:

$$R' = \frac{5,064,957}{5,064,957 + 101,206,917} \cdot 100$$

$$R' = 4.76$$

The resulting calculation is the illegitimacy ratio for Mexico under the conditions of illegitimacy in Canada in 1961. From Table 4.2, the standardized illegitimacy ratio, for Mexico according to Jamaican conditions for 1960, was 28.59. The actual reported illegitimacy ratio for Mexico in 1960 was 25.03; consequently, Mexico approximates Jamaican illegitimacy conditions.

Since the same procedure was applied throughout all 36 selected countries, the calculations as seen in Tables 4.1 and 4.2 will not be repeated. However, the following listing provides the major sources used in obtaining data for such calculations:

- (1) The age-specific illegitimate and legitimate fertility rates for Jamaica in 1960 were obtained from Hartley, 1970, Table 2, p. 105. Only the age group 45-49 was calculated separately.
- (2) Data for marital status by age and sex for the 36 selected countries was taken from:
 - U.N. Department of Economic and Social Affairs, 1963, Table 13,
pp. 414-467;
 - U.N. Department of Economic and Social Affairs, 1964, Table 34,
pp. 714-737;
 - U.N. Department of Economic and Social Affairs, 1969, Table 7,
pp. 190-277.

TABLE B-1

CALCULATION OF AGE-SPECIFIC
ILLEGITIMATE AND LEGITIMATE FERTILITY
RATES OF MODEL COUNTRY
(CANADA, 1961)

Age Groups (1)	I'_x (2)	U'_x (3)	i'_x (2)/(3)= (4)	L'_x (5)	M'_x (6)	l'_x (5)/(6)= (7)
15-19	7,548	642,327	1.17	31,850	61,197	52.04
20-24	6,841	243,292	2.81	128,859	353,215	36.48
25-29	2,839	96,763	2.98	124,681	498,637	25.00
30-34	1,645	74,842	2.19	87,396	552,561	15.81
35-39	909	73,524	1.23	49,942	556,328	8.81
40-44	286	72,533	0.39	15,296	486,432	3.14
45-49	18	81,487	0.02	1,128	418,313	0.26

Sources: Base data obtained from D.B.S., 1963a, Table B-10, p. 105;
D.B.S., 1963b, Table 78, pp. 78-1 to 78-2.

TABLE B-2

INDIRECT STANDARDIZATION
APPLIED TO MEXICO
(AS NAMED COUNTRY) USING
CANADA AS MODEL

Age Groups	i'_x Canada 1961 (2)	U_x Mexico 1960 (3)	$i'_x \cdot U_x$ (2) · (3) = (4)	l'_x Canada 1961 (5)	M_x Mexico 1960 (6)	$l'_x \cdot M_x$ (5) · (6) = (7)
15-19	1.17	1,747,061	2,044,061	52.04	390,748	20,334,526
20-24	2.81	558,686	1,569,908	36.48	931,700	33,988,416
25-29	2.98	271,511	809,103	25.00	999,581	24,989,525
30-34	2.19	176,528	386,596	15.81	838,449	13,255,879
35-39	1.23	160,757	197,731	8.81	777,799	6,852,409
40-44	0.39	140,007	54,603	3.14	530,651	1,666,244
45-49	0.02	147,728	2,955	0.26	461,223	119,918

$$I' = \sum U_x \cdot i'_x = \sum \text{Column 4} = 5,064,957$$

$$L' = \sum M_x \cdot l'_x = \sum \text{Column 7} = 101,206,917$$

Sources: For i'_x and l'_x see Table B-1; U.N. Department of Economic and Social Affairs, 1964, Table 34, p. 720 (for U_x and M_x , Mexico, 1960).

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